



The Journal

Michigan

STATE MEDICAL SOCIETY

November, 1959

Volume 58

Number 11

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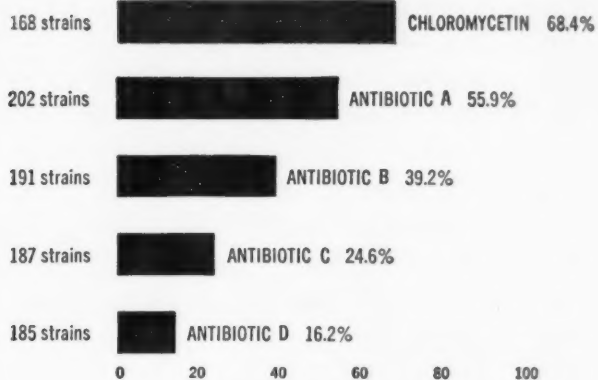
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REFERENCES: (1) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* 29:159, 1957. (2) Suter, L. S., & Ulrich, E. W.: *Antibiotics & Chemother.* 9:38, 1959. (3) Murphy, J. J., & Rattner, W. H.: *J.A.M.A.* 166:616, 1958. (4) Rhoads, P. S.: *Postgrad. Med.* 21:563, 1957. (5) Horton, B. F., & Knight, V.: *J. Tennessee M. A.* 48:367, 1955. (6) Seneca, H.: *Am. Pract. & Digest Treat.* 10:622, 1959. (7) Hall, W. H.: *M. Clin. North America* 43:191, 1959. (8) Seneca, H., et al.: *J. Urol.* 81:324, 1959. (9) Wolfsohn, A. W.: *Connecticut Med.* 22:769, 1958.

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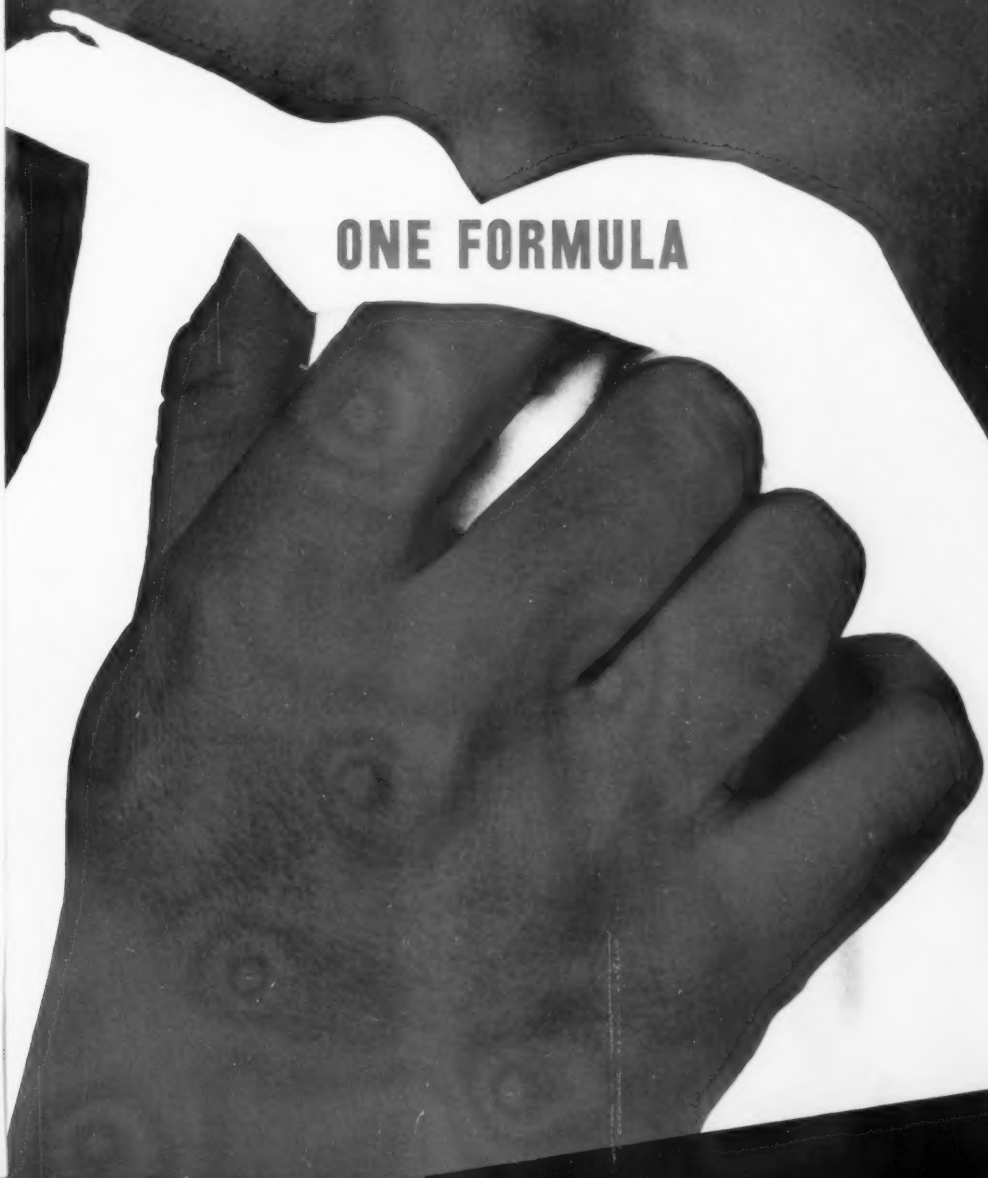
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- renews sense of well-being

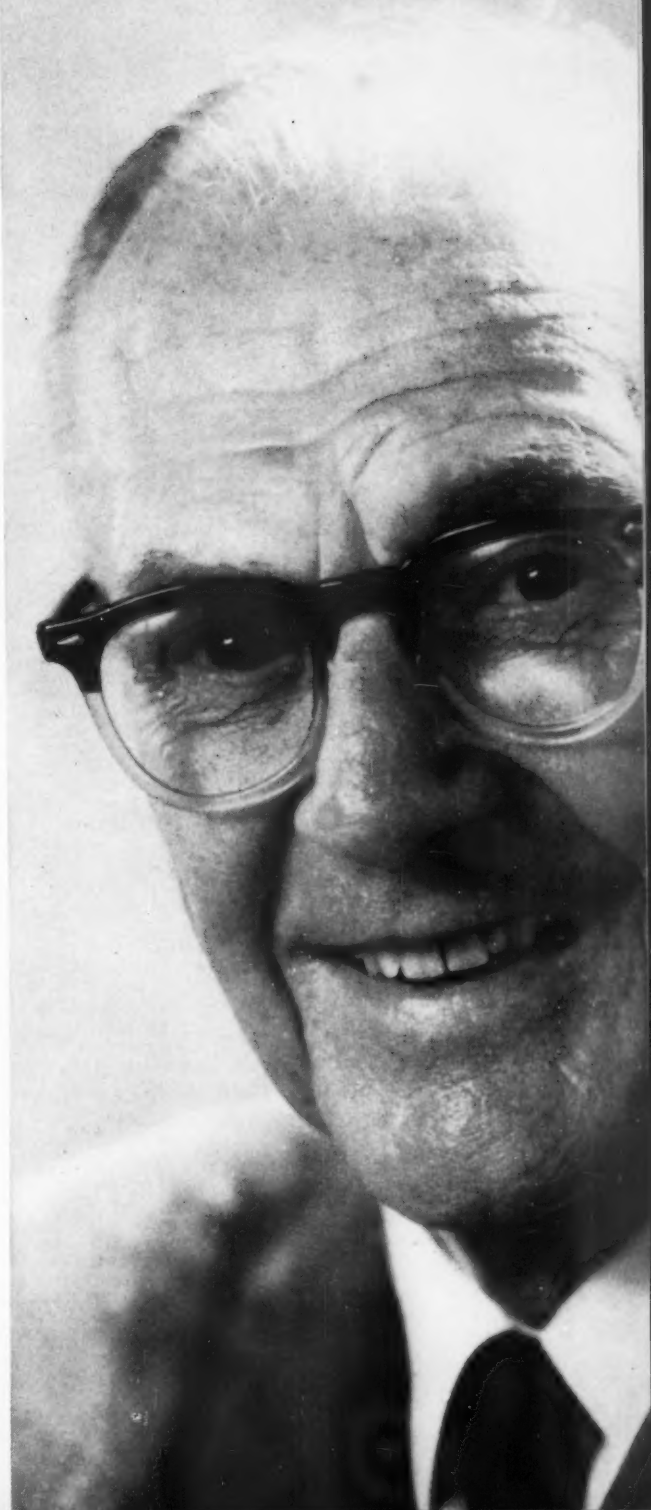
Note: Because of dramatic relief of symptoms and increased sense of well-being in anginal cases, it is advisable to caution the patient against overexertion.

DOSAGE: Start with 75 mg. of NIAMID daily in single or divided doses. After 2 weeks or more, adjust the dosage, depending upon patient response, in steps of one or one-half 25 mg. tablet. Once improvement is seen, gradually reduce dosage to the maintenance level. Many patients respond to NIAMID within a few days, others within 7 to 14 days. NIAMID is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

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pertussis, *K. pneumoniae*, *Neisseria*
sp., *Shigella*, *Salmonella* and many
strains of *B. proteus*.

Q But if I use KANTREX Injection, won't that
help make bacteria resistant to it also?

Next page, please

* Kanamycin sulfate injection (Bristol)

Q But if I use KANTREX Injection, won't that help make bacteria resistant to it also?

A A very good question, but it is reassuring to note that in almost two years of clinical use of KANTREX for the treatment of infections for which it is recommended, the emergence of KANTREX-resistant bacterial populations has not been a problem.

Q My impression is that KANTREX is just another neomycin. Isn't that so?

A Indeed not. The only thing KANTREX and neomycin have in common is a similar antimicrobial spectrum. Otherwise, they're very different: they have different chemical structures; the toxicity of KANTREX is "much less than that of neomycin"¹⁴; and clinically, KANTREX Injection is practical for systemic administration routinely, while neomycin is not.

Q You mean that KANTREX Injection doesn't have the nephrotoxicity of neomycin?

A Precisely. It's true that when KANTREX Injection is used, urinary casts — even slight albuminuria or microscopic hematuria — may appear, especially in poorly hydrated patients, but this does not reflect any progressive damage to the kidneys. These signs promptly disappear on adequate hydration or termination of therapy.

Q Then why do you recommend reduced dosage in patients with renal impairment?

A Because renal impairment causes an excessive accumulation of KANTREX in the blood and tissues, when usual doses are administered. Since KANTREX Injection is excreted entirely by the kidneys, renal impairment leads

to unnecessarily high and prolonged blood levels; and such excessive concentrations increase the risk of ototoxicity.

Q *Is that why we see reports of patients developing hearing loss during KANTREX Injection therapy?*

A Yes. A study of the few reported cases in which patients have suffered impaired hearing will show that in every instance they had pre-existing or concurrent renal impairment, yet received usual or excessive doses of KANTREX Injection. Dosage recommendations for KANTREX Injection emphasize that in patients with renal dysfunction, adequate serum levels can be achieved with a fraction of the dose suggested for patients with normal kidney function — with minimal risk of ototoxicity.

Q *Since urinary tract infections are often accompanied by renal impairment, does that mean I shouldn't use KANTREX Injection in such conditions?*

A Not at all. With proper precautions, KANTREX Injection is an excellent drug for the treatment of urinary tract infections, especially those due to *Proteus*, *A. aerogenes* and *E. coli*, even when renal impairment is present.

Q *What are the "proper precautions" in a patient with impaired renal function?*

A The package literature covers them in detail. First, the daily dose should be reduced in such a patient. Then, if he is going to receive KANTREX Injection for 7 days or more, a pre-treatment audiogram should be done, and it should be repeated at appropriate intervals during therapy. If tinnitus or subjective hearing loss develops, or if followup audiograms show significant loss of high frequency response, KANTREX therapy should be discontinued. However, therapy for 7 days or more

is seldom required because the clinical response to KANTREX Injection is so rapid.

Q Why do you put so much emphasis on KANTREX's "rapid action"? Every antibiotic I've heard about is supposed to be "rapid acting."

A There is such an abundance of clinical evidence about "rapid acting" that it takes KANTREX Injection out of the "supposed-to" class.^{1, 2, 3, 7, 8, 9, 11, 15, 16, 19, 21, 22, 26, 29, 32, 33} Remember, the effectiveness of KANTREX Injection therapy can usually be appraised in 24 to 36 hours. That's definite evidence of rapid action. In fact, one group of investigators reported that "the rapidity with which bacteria are killed by this agent is reflected by the promptness of the clinical response."²⁹

Q Does KANTREX Injection cause blood dyscrasias?

A In extensive clinical and toxicity studies by numerous investigators, as well as almost two years of general use, not a single instance of such toxicity has been reported.

Q Can I administer KANTREX Injection in any other way than by the intramuscular route?

A Yes. While it's usually given intramuscularly, other routes are practicable: intravenous, intraperitoneal, by aerosol, and as an irrigating solution. Complete instructions are included in the package insert.

Q So you think I ought to use KANTREX Injection as my first choice antibiotic in staph and gram-negative infections?

A Yes — because all evidence to date indicates that it is bactericidal against a wide range of organisms...rapid acting...does not encourage development of bacterial resistance...is well tolerated in specified dosage...and has not caused any blood dyscrasias.

KANTREX® CAPSULES

*for local gastrointestinal therapy...
not for systemic infections*

Q *Why can't I use KANTREX Capsules for systemic medication?*

A Because there is only negligible absorption of KANTREX from the gastrointestinal tract.^{3,5,6,8,28,34} Thus, capsules cannot provide effective blood levels.

Q *Then what are KANTREX Capsules used for?*

A Preoperative bowel sterilization, and local treatment of intestinal infections due to kanamycin-sensitive organisms.

Q *I've been using neomycin for preoperative bowel sterilization. Why should I switch to KANTREX Capsules?*

A Because KANTREX has been rated as "superior to neomycin" for this purpose.⁶ It provides rapid and satisfactory control of coliforms, clostridia, staphylococci and streptococci; yeasts do not proliferate; stool concentrations of the drug are exceptionally high; and nausea, vomiting or intestinal irritation have not been observed.^{5,6}

Q *What advantages do KANTREX Capsules offer me in the treatment of intestinal infections?*

A A high degree of effectiveness against most of the pathogens responsible for such infections: *Salmonella*, *Shigella*, *Staph. aureus*, *E. coli* and *Endamoeba histolytica*. Moreover, their use has been "remarkably free of any side effects."³¹

KANTREX[®]

INJECTION

KANAMYCIN SULFATE INJECTION

INDICATIONS

Infections due to kanamycin-sensitive organisms, particularly staph or "gram-negatives": genito-urinary infections; skin, soft tissue and post-surgical infections; respiratory tract infections; septicemia and bacteremia; osteomyelitis and periostitis.

DOSAGE: INTRAMUSCULAR ROUTE

Recommended daily dose is 15 mg. per kg. of body weight, in 2 to 4 divided doses.

For intramuscular administration, KANTREX Injection should be injected deeply into the upper outer quadrant of the gluteal muscle.

TOXICITY

When the recommended precautions are followed, the incidence of toxic reactions to KANTREX is low. In well hydrated patients under 45 years of age with normal kidney function, receiving a total dose of 20 Gm. or less of KANTREX, the risk of ototoxic reactions is negligible.

In patients with renal disease and impaired renal function, the daily dose of KANTREX should be reduced in proportion to the degree of impairment to avoid accumulation of the drug in serum and tissues, thus minimizing the possibility of ototoxicity. In such patients, if therapy is expected to last 7 days or more, audiograms should be obtained prior to and during treatment. KANTREX therapy should be stopped if tinnitus or subjective hearing loss develops, or if audiograms show significant loss of high frequency response.

OTHER ROUTES OF ADMINISTRATION

KANTREX should be used by intravenous infusion only when the intramuscular route is impracticable. KANTREX can also be employed for intraperitoneal use, aerosol treatment, and as an irrigating solution. See package insert for directions.

PRECAUTIONS

Use of antibiotics may occasionally result in overgrowth of non-sensitive organisms. If superinfection appears during therapy, appropriate measures should be taken.

SUPPLY

Available in rubber-capped vials as a ready-to-use sterile aqueous solution in two concentrations (stable at room temperature indefinitely):

KANTREX Injection, 0.5 Gm. kanamycin (as sulfate) in 2 ml. volume.

KANTREX Injection, 1.0 Gm. kanamycin (as sulfate) in 3 ml. volume.

CAPSULES

(for local gastrointestinal therapy; not for systemic medication)

INDICATIONS AND DOSAGE

For preoperative bowel sterilization: 1.0 Gm. (2 capsules) every hour for 4 hours, followed by 1.0 Gm. (2 capsules) every 6 hours for 36 to 72 hours.

For intestinal infections: Adults: 3.0 to 4.0 Gm. (6 to 8 capsules) per day in divided doses for 5 to 7 days. Infants and children: 50 mg. per kg. per day in 4 to 6 divided doses for 5 to 7 days.

PRECAUTION

Preoperative use of KANTREX Capsules is contraindicated in the presence of intestinal obstruction. Although only negligible amounts of KANTREX are absorbed through intact intestinal mucosa, the possibility of increased absorption from ulcerated or denuded areas should be considered.

SUPPLY

KANTREX Capsules, 0.5 Gm. kanamycin (as sulfate), bottles of 20 and 100.

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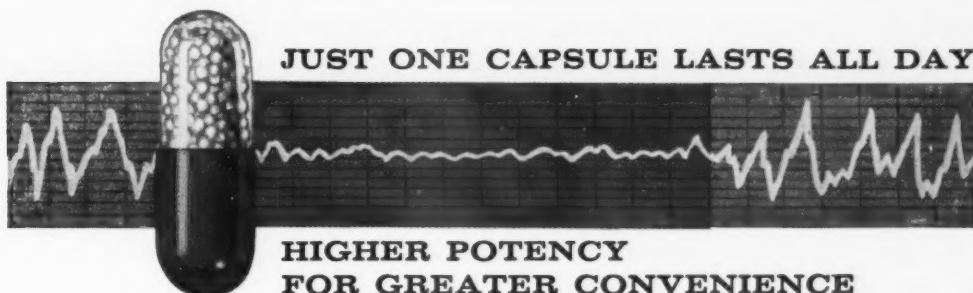
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NEW AND EXCLUSIVE

FOR SUSTAINED TRANQUILIZATION

MILTOWN® (*meprobamate*) now available
in 400 mg. continuous release capsules as

Meprospan®-400



**HIGHER POTENCY
FOR GREATER CONVENIENCE**

- relieves *both* mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast,
one capsule with evening meal

Available: *Meprospan-400*, each blue capsule contains
400 mg. Miltown (*meprobamate*)
Meprospan-200, each yellow capsule contains
200 mg. Miltown (*meprobamate*)

Both potencies in bottles of 30.

W•WALLACE LABORATORIES, *New Brunswick, N. J.*

ONE-8426

NOW... SAFER, EFFECTIVE TRANQUILIZER THERAPY

tranquilization

anti-emetic

greater specificity
of tranquilizing action
—divorced from such
"diffuse" effects as
anti-emetic action
—explains why

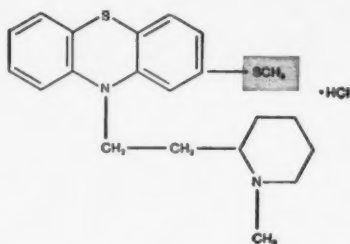
Mellaril

THIORIDAZINE HCl

is virtually free of such toxic effects as — jaundice — Parkinsonism — blood dyscrasia

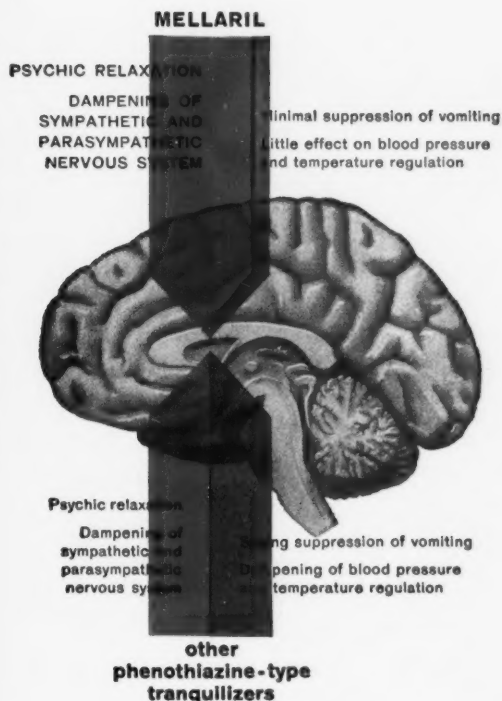
"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. ... This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."

a new advance in tranquilization:
greater specificity of tranquilizing action results in fewer side effects



The presence of a thiomethyl radical ($S-CH_3$) is unique in Mellaril and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

- 1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.



- 2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.
- 3 A notable absence of extrapyramidal stimulation.
- 4 Lack of impairment of patient's normal drive and energy.
- 5 Virtual freedom from such toxic effects as jaundice, photosensitivity, skin eruptions, blood forming disorders.

| INDICATION | USUAL STARTING DOSE | TOTAL DAILY DOSAGE RANGE |
|--|---------------------|--------------------------|
| ADULTS: Mental and Emotional Disturbances: MILD — where anxiety, apprehension and tension are present MODERATE — where agitation exists in psychoneuroses, alcoholism, intractable pain, senility, etc. SEVERE — in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.: Ambulatory Hospitalized | 10 mg. t.i.d. | 20-60 mg. |
| | 25 mg. t.i.d. | 50-200 mg. |
| | 100 mg. t.i.d. | 200-400 mg. |
| | 100 mg. t.i.d. | 200-800 mg. |
| CHILDREN: BEHAVIOR PROBLEMS IN CHILDREN | 10 mg. t.i.d. | 20-40 mg. |

MELLARIL Tablets, 10 mg., 25 mg., 100 mg.

*Oatfield, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959



avoid the risk of insoluble, irritating aspirin particles

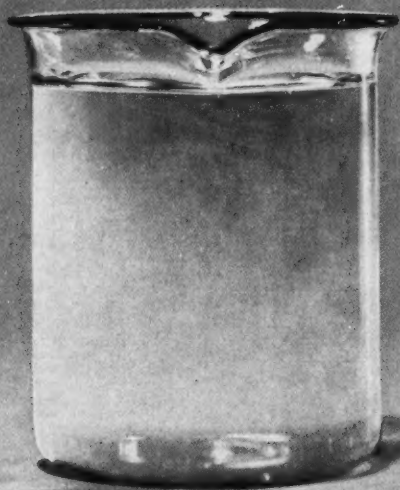
Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.¹⁻¹⁰ Studies performed in conjunction with gastrectomy^{4,5} and gastroscopy² have shown insoluble aspirin particles firmly adherent to

the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.^{2,4,5} This is reported to be particularly true in patients with peptic ulcer.⁴

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage



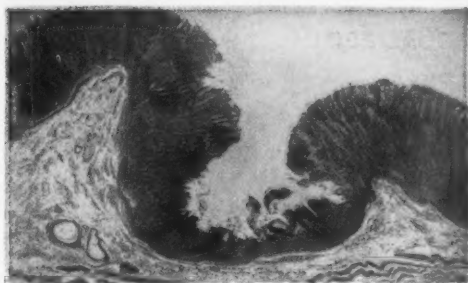
Regular aspirin crystals 24 hours after being mixed into water.



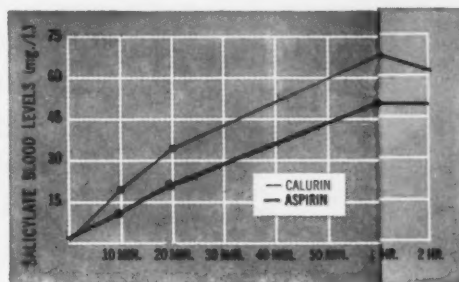
Calurin crystals in solution one minute after being mixed into water.

CALURIN^{*}

STABLE SOLUBLE CALCIUM-ACETYSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.¹¹

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

- 1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.
- 2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritis effect.
- 3 Sodium-free — for safer long-term therapy.
- 4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

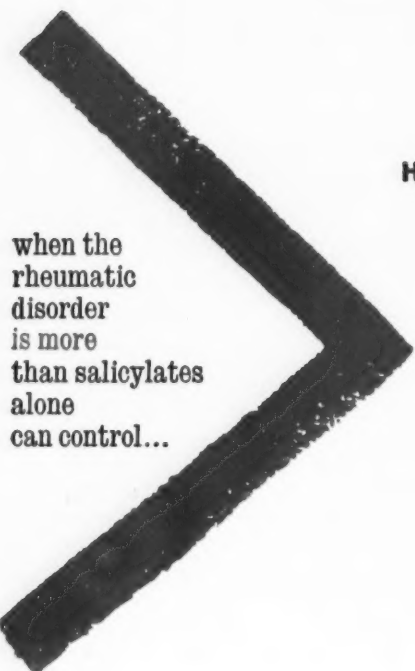
Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic

fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

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^{*}TRADEMARK

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska



when the
rheumatic
disorder
is more
than salicylates
alone
can control...

**MORE
HIGHLY INDIVIDUALIZED
THERAPY
FOR THE
RHEUMATIC
"IN-BETWEEN"**



...but
control
requires less
than
intensive
steroid therapy
alone

Aristo

wider latitude in adjusting dosage

ARISTOGESIC is particularly effective for relief of chronic — but less severe — pain of rheumatic origin. ARISTOGESIC combines the anti-inflammatory effects of ARISTOCORT® Triamcinolone with the analgesic action of salicylamide, a highly potent salicylate. Dosage requirements for ARISTOGESIC are substantially lower than generally required for each agent alone. The exceptionally wide latitude of dosage adjustment with ARISTOGESIC permits well-tolerated therapy for long periods of time with fewer side effects.

Indications: Mild cases of rheumatoid arthritis, tenosynovitis, synovitis, bursitis, mild spondylitis, myositis, fibrositis, neuritis, and certain muscular strains.

Dosage: Average initial dosage: 2 capsules 3 or 4 times daily. Maintenance dosage to be adjusted according to response.

Precautions: All precautions and contraindications traditional to corticosteroid therapy should be observed. The amount of drug used should be carefully adjusted to the lowest dosage which will suppress symptoms. Discontinuance of therapy must be carried out gradually after patients have been on steroids for prolonged periods.

Each ARISTOGESIC Capsule contains:

| | |
|------------------------------------|---------|
| ARISTOCORT® Triamcinolone | 0.5 mg. |
| Salicylamide | 325 mg. |
| Dried Aluminum Hydroxide Gel | 75 mg. |
| Ascorbic Acid | 20 mg. |

Supply: Bottles of 100 and 1,000.


gesic[®]
Capsules
Steroid-Analgesic Compound LEDERLE



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1 1/4 Grs. Ea.
FLAVORED

Living up to a family tradition

There are probably certain medications which are special favorites of yours, medications in which you have a particular confidence.

Physicians, through ever increasing recommendation, have long demonstrated their confidence in the efficacy, potency and purity of Bayer Aspirin, the world's first aspirin.

And the same manufacturing skill, the same 106 ingredient and product tests, the same exclusive processes which contribute to the superiority of Bayer Aspirin set the standards of excellence for Bayer Aspirin for Children.

You can depend on Bayer Aspirin for Children for it has been conscientiously formulated to be the best tasting aspirin ever made and to live up to the Bayer family tradition of providing the finest aspirin the world has ever known.

Bayer Aspirin for Children—1 1/4 grain flavored tablets—Supplied in bottles of 50.

• We welcome your requests for samples on Bayer Aspirin and Flavored Bayer Aspirin for Children.

New
Tamper-Proof
Cap



THE BAYER COMPANY, DIVISION OF STERLING DRUG INC., 1450 BROADWAY, NEW YORK 18, N. Y.

*for
the
tense
and
nervous
patient*



relief comes fast and comfortably

- does not produce autonomic side reactions
- does not impair mental efficiency, motor control, or normal behavior.

Usual Dosage: One or two 400 mg. tablets t.i.d.

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets or as MEPROTABS®—400 mg. unmarked, coated tablets.

Miltown®
meprobamate (Wallace)



WALLACE LABORATORIES / New Brunswick, N. J.

CM-3870

NOW

*... a new way
to relieve pain
and stiffness
in muscles
and joints*

indicated in:

MUSCLE STIFFNESS

LUMBOSACRAL STRAIN

SACROILIAC STRAIN

WHIPLASH INJURY

BURSITIS

SPRAINS

TENOSYNOVITIS

FIBROSITIS

FIBROMYOSITIS

LOW BACK PAIN

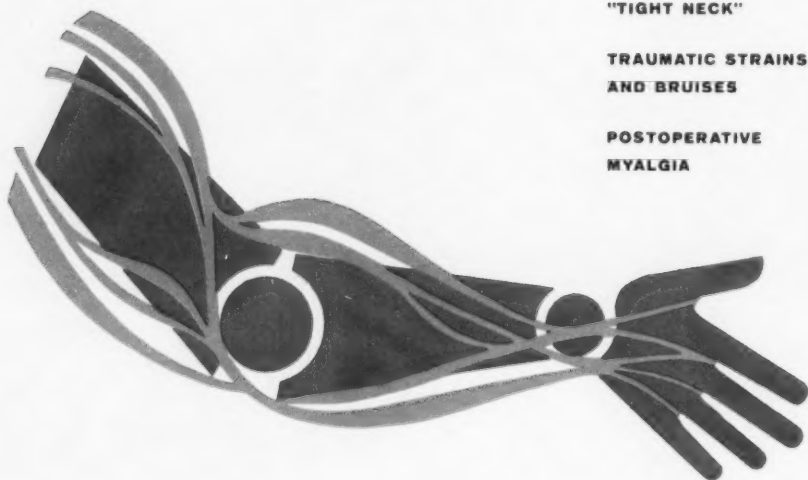
DISC SYNDROME

SPRAINED BACK

"TIGHT NECK"

**TRAUMATIC STRAINS
AND BRUISES**

**POSTOPERATIVE
MYALGIA**



- Exhibits unusual analgesic properties, different from those of any other drug
- Specific and superior in relief of SOMATIC pain
- Modifies central perception of pain without abolishing natural defense reflexes
- Relaxes abnormal tension of skeletal muscle

SOMATM

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

- More specific than salicylates
- Less drastic than steroids
- More effective than muscle relaxants

SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. **SOMA** is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with **SOMA** than with previously used analgesic, sedative or relaxant drugs.

SOMA also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of **SOMA** is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy, particularly on high dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white coated 350 mg. tablets.

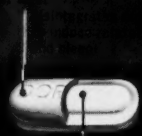
Literature and samples on request.



WALLACE LABORATORIES, NEW BRUNSWICK, N. J.

For those patients who complain

carries your patients through the middle of the night



sleep continues
smoothly as inner
case dissolves

Each Hibralin timed-release
tablet contains:

Barbitol* 90 mg.

Warning: May be habit forming

Mephensin 425 mg.

*Darbey brand of pentobarbital

CAUTION: Federal law prohibits
dispensing without prescription

Dosage: One or two tablets 1/2 hour
before retiring.

about waking up at 2 A.M.



nebralin

timed-release tablets

timed-release action for a full night's sleep

NEBRALIN is designed to duplicate the normal sleep pattern. It induces deep muscular relaxation and induces sustained, relaxed sleep by the release of Chloral and mephensin in a timed-release tablet. Rapid-acting mephensin quickly relaxes skeletal muscles by overcoming "tension" and "restless" the body for sleep. Chloral provides CNS sedation to induce sound, relaxed sleep. The initial and sustaining dosages are designed to keep the amount of barbiturate to be inactivated at any one time at a low level tapering toward morning. Evidence indicates that mephensin is capable of producing sleep,¹ and when combined with a barbiturate enhances barbiturate action.² Moreover, the integrated action of the two components permits smaller dosages of each,³ assuring your patients refreshed awakenings without "morning hangover."⁴

1 Schlesinger, E. B., Jr. *New York Acad. Sc.* 2:5, (Nov.) 1948.

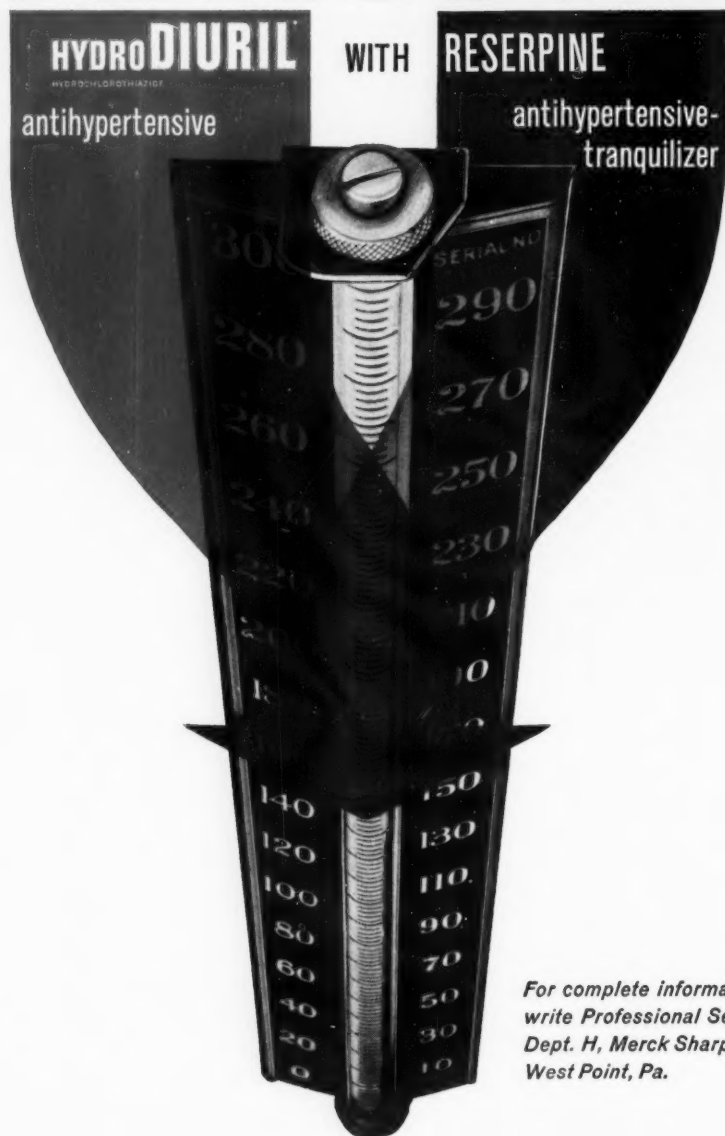
2 Richards, R. K., and Taylor, J. O. *Anesthesiology* 17:314, 1958.

3 Shideman, J. E. *Postgrad. Med.* 24:267, 1958.

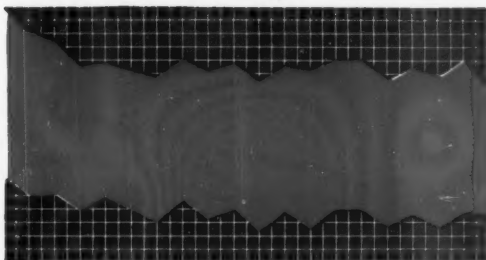
4 Berger, F. *Pharmacol. Rev.* 1:243, 1949.

greater antihypertensive effect...fewer side effects

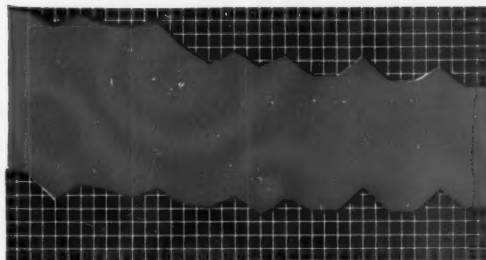
HYDROPRES



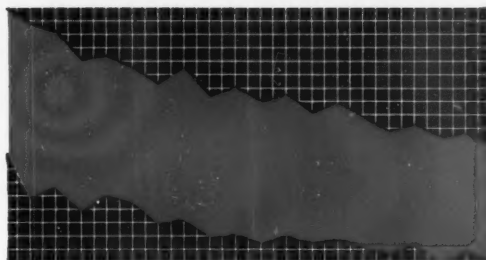
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write Professional Services,
Dept. H, Merck Sharp & Dohme,
West Point, Pa.*



HYDRODIURIL alone



RESERPINE alone



HYDROPRES

much more effective
than either of its
components alone

- Effective by itself in a majority of patients. Provides smooth, more trouble-free management of hypertension.
- Since HYDRODIURIL and reserpine potentiate each other, the required dosage of each is lower when given together as HYDROPRES than when either is given alone.
- HYDROPRES provides the needed and valuable tranquilizing effect of reserpine. Lower dosage may reduce such side effects of reserpine as excessive sedation and depression.
- Arrest or reversal of organic changes of hypertension may occur.
- Headache, dizziness, palpitations and tachycardia are usually promptly relieved. Anginal pain may be reduced in incidence and severity.
- With HYDROPRES, dietary salt may be liberalized.
- Convenient, controlled dosage.

HYDROPRES-25

25 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one to four times a day.

HYDROPRES-50

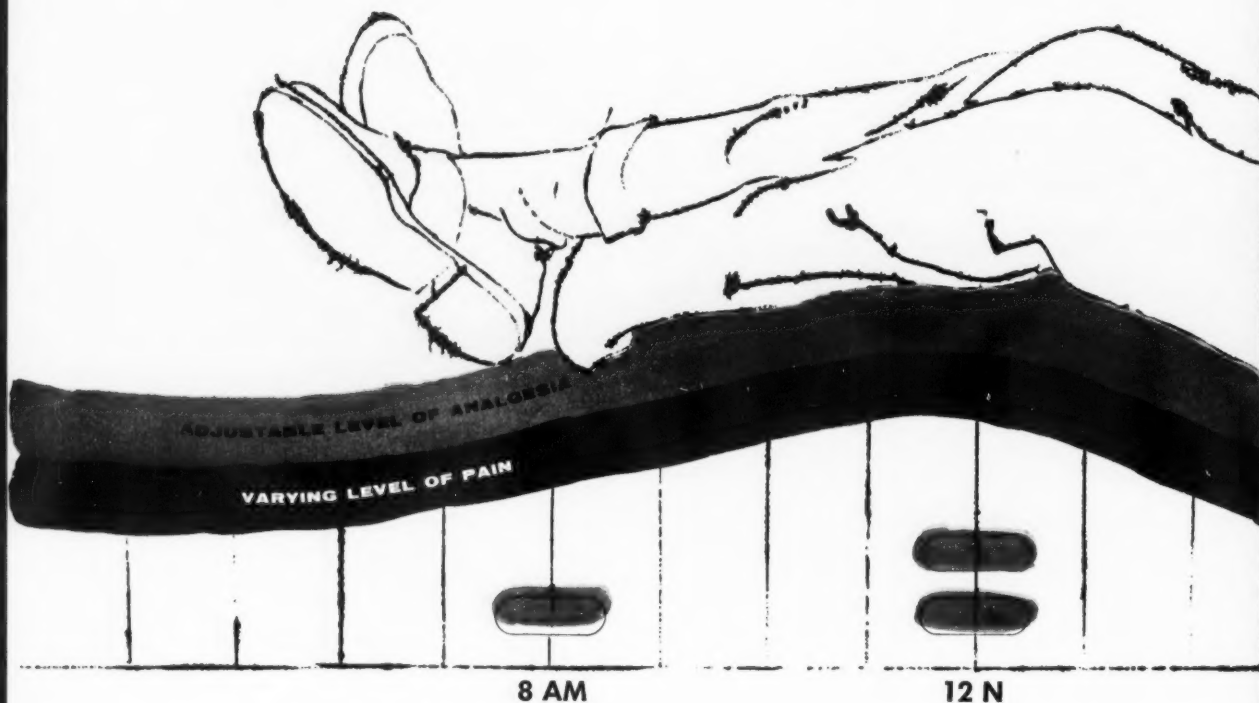
50 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one or two times a day.

If the patient is receiving ganglion blocking drugs or hydralazine,
their dosage must be cut in half when HYDROPRES is added.



MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

HYDRODIURIL AND HYDROPRES ARE TRADEMARKS OF MERCK & CO., INC.



keep all patients* pain-free at all times

- with the proper potency to match pain intensity
- with dosage flexibility to match pain variations

Phenaphen[®]

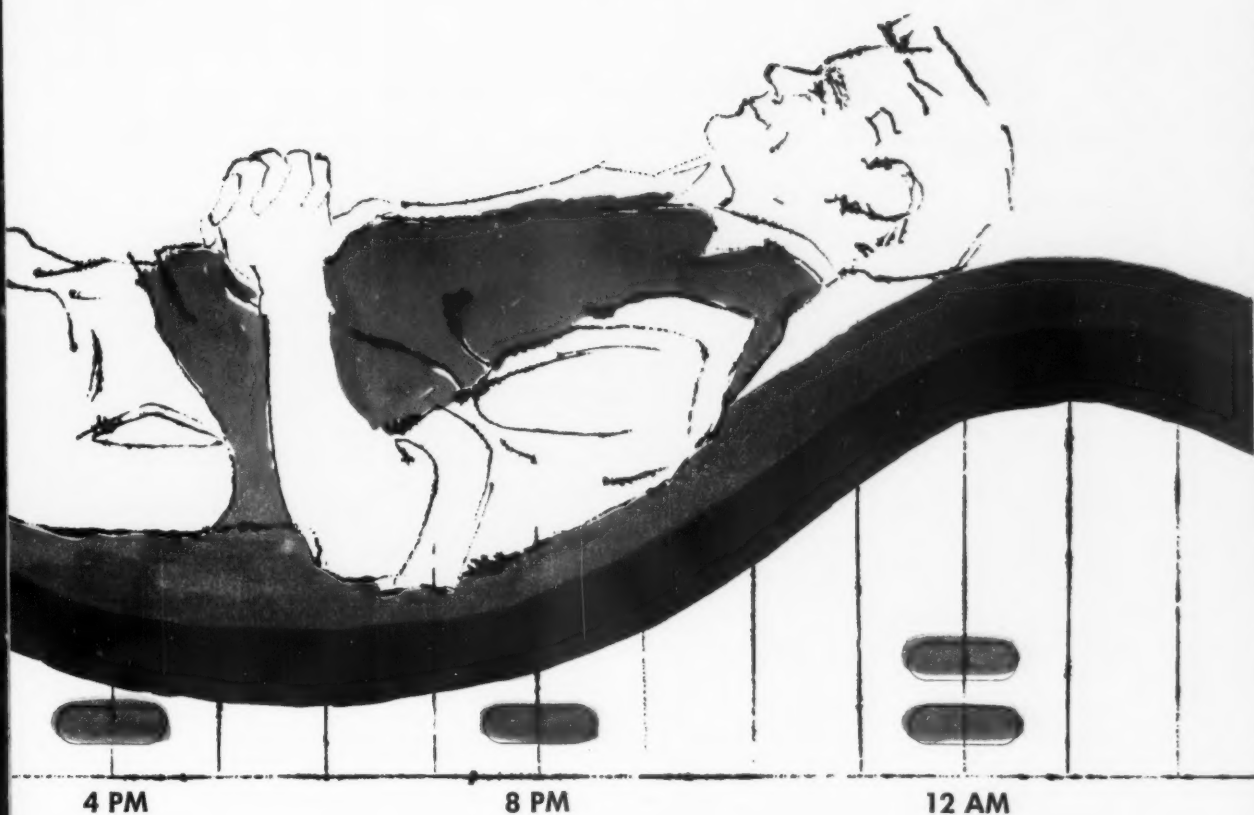
or

Phenaphen[®] with Codeine

*except those for whom recourse to morphine is inescapable.

Robins

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Ethical Pharmaceuticals of Merit since 1878



Phenaphen and Phenaphen with Codeine provide a wide range of analgesia, plus complete dosage flexibility, to match varying pain requirements.

Yours to prescribe:

The **right** dose of the **right** potency at the **right** time.

Phenaphen

Basic non-narcotic formula

For mild to moderate pain

Each capsule contains:

| | |
|-------------------------------|-----------|
| Phenacetin (3 gr.) | 194.0 mg. |
| Acetylsalicylic acid (2½ gr.) | 162.0 mg. |
| Phenobarbital (¼ gr.) | 16.2 mg. |
| Hyoscyamine sulfate | 0.031 mg. |

Phenaphen No. 2

Phenaphen with Codeine Phosphate ¼ gr. (16.2 mg.)

For moderate to severe pain

Phenaphen No. 3

Phenaphen with Codeine Phosphate ½ gr. (32.4 mg.)

For severe or stubborn pain

Phenaphen No. 4

Phenaphen with Codeine Phosphate 1 gr. (64.8 mg.)

For stubborn or intense pain—to obviate or postpone use of morphine or addicting synthetic narcotics

DOSAGE: One or two capsules as required.

You and Your Business

MEDICARE

The Defense Department has asked that four particular problems in the administration of the Medicare Program be invited to the attention of Michigan doctors of medicine.

And in doing so, Theodore J. Krause, manager of the Medicare Division of Michigan Medical Service, offers assistance to doctors to answer any questions they may have.

These are the four problems:

(1) **Delay in Medicare Billing.** Delayed billings cause many problems and added expense to all parties who are interested in settling the matter of payment as soon as practicable. To help discourage late reporting, the Government has imposed a one-year limit after completion of care for the submission of the Medicare claim. Explanatory statements from the physician must accompany any claim older than one year.

(2) **Incomplete Claims.** The Government reports that about 40 per cent of the Medicare claims are incomplete. To insure prompt payment, the Government urges doctors to be sure to include the patient's identification information (from his Identification and Privilege Card DD form 1173) and the patient's signature.

(3) **Management of Suspected and/or Proven Malignancies.** The Government will consider such case eligible when in the opinion of the cognizant medical authority, treatment is urgently required and performed in a hospital immediately upon discovery of the condition. Patients with suspected and/or proven malignancy will be considered as acutely ill patients and thus eligible for care under the Medicare Program. Doctors are urged to become informed about the exceptions in this area of medical care.

(4) **Potential Restoration of Benefits.** The Government points out that any reinstatement of care—which may be rumored in the news media—will be officially announced when any such reinstatement decisions are made.

SURGERY FOR PREVENTION OF CANCER DONE TWICE AS OFTEN AS DECADE AGO

Surgery for the treatment or prevention of cancer has become one of the most common procedures among all types of surgery performed in the United States.

Marked increases also have been made in the

frequency of surgery in general over a period of a decade, and there has been a dramatic shift in the type of surgery being done in the nation, reports the Health Insurance Institute.

The study disclosed that one out of seven operations among nearly 100,000 selected claims was aimed at removing or preventing cancer. In the 1947 study, cancer surgery was responsible for approximately one out of fourteen claims. Some 94 per cent of the cancer surgery in the 1957 report was for the removal of benign tumors or cysts and the remainder for the removal of various types of malignant tumors.

In addition to increases in cancer prevention surgery, the study showed claims from sixty-eight operations on the heart where the 1947 study reported none. On the other hand, appendectomies and tonsillectomies have become less common.

Among dependent wives and children covered by the group insurance, tonsillectomies were the reason for 37 per cent of the 1947 claims and appendectomies 11 per cent. The new study showed these procedures to be responsible, respectively, for 18 per cent and 4 per cent of the claims.

Multiple surgical procedures, where two or more operations are performed at one time, also are becoming common. Some 12 per cent of the claims were for multiple procedures.

Out-of-hospital surgical procedures are growing in frequency. The new survey showed 43 per cent of the claims for out-patients and out-of-hospital cases, compared with 18 per cent in the 1947 study.

The report was based on a 1957 survey by the Society of Actuaries of more than 100,000 group surgical insurance claims. The survey was compared, where possible, with a similar study made in 1947.

SEEK TO CLARIFY MD MILITARY STATUS

W. J. Myers, Colonel, AGC, deputy state director of Michigan Selective Service System, offers his help to any physicians who have questions about military status in records to residency training. He invites inquiries at his office, Arnold Building, 1120 May Street, Lansing.

Colonel Myers reports that questions arise because some hospitals and medical schools are accepting physicians for residency training without regard to their liability for military service.

Selective Service Boards have been advised that a physician should not be granted occupational deferment in Class II-A to complete residency

(Continued on Page 1774)

MAINSTAY OF RHEUMATOID ARTHRITIS THERAPY

Plaquenil[®] SULFATE

Brand of hydroxychloroquine sulfate

New Long Term Chemotherapy of RHEUMATOID ARTHRITIS

"Whatever else may be needed from time to time in the management of individual cases, these drugs [Plaquenil and Aralen] should always be given a prolonged trial (at least six months) as the 'mainstay' of therapy."

Bagnall, A. W. (Univ. British Columbia, Vancouver, B.C.): A.M.A. Clinical Meeting (Scientific Section, Exhibit No. 124), Minneapolis, Minnesota, Dec. 2-5, 1958.

"The 4-aminoquinoline drugs (Plaquenil and Aralen) together with supplemental agents administered in nontoxic doses effectively maintained suppression of the disease in 83 per cent of 194 patients followed for 18 months."

Scherbel, A. L.; Harrison, J. W., and Atdjian, Martin: Cleveland Clin. Quart. 25:95, April, 1958.

"When used in tolerated dosage and over a sufficient period of time, there appears to be a tremendous therapeutic potential in the antimalarial drugs. . . . Plaquenil in this study did not have as many side effects as Aralen and thus appears to be a more practical compound."

Cramer, Quentin (Kansas City): Missouri Med. 55:1203, Nov., 1958.

Plaquenil (brand of hydroxychloroquine) and Aralen (brand of chloroquine), trademarks reg. U.S. Pat. Off.



Plaquenil is the hydroxy derivative of Aralen[®] and is available as Plaquenil sulfate in tablets of 200 mg. (bottles of 100).

Average Dosage:

INITIAL—400 to 600 mg. (1 tablet 2 or 3 times daily)

MAINTENANCE—200 to 400 mg. (1 tablet once or twice daily)

Write for Plaquenil booklet discussing clinical experience, dosage, tolerance, precautions, etc., in detail.

NO SALT... *but seasoned*

A meal of even the most colorful and the most meticulously prepared food can be dreary without salt. Neocurtasal, for the patient on a low sodium diet, brings back flavor to food and makes eating a pleasure once more. Neocurtasal is also valuable for preventing potassium deficiency (weakness, etc.) in patients on diuretic therapy with chlorothiazide or its derivatives.

Neocurtasal[®]

*An excellent salt replacement for
Salt Free (LOW SODIUM) Diets*

Neocurtasal contains potassium chloride, potassium glutamate, glutamic acid, calcium silicate and potassium iodide (0.01 per cent)

Supplied in
2 oz. shakers
and 8 oz. bottles.

*Sold Only
through Drugstores*

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GOMMI

Winthrop

LABORATORIES
New York 18, N. Y.

COMPREHENSIVE, THREE-LEVEL TREATMENT OF DEPRESSION

AND ASSOCIATED ANXIETY
AND PHYSICAL TENSION

RELIEVES DEPRESSION

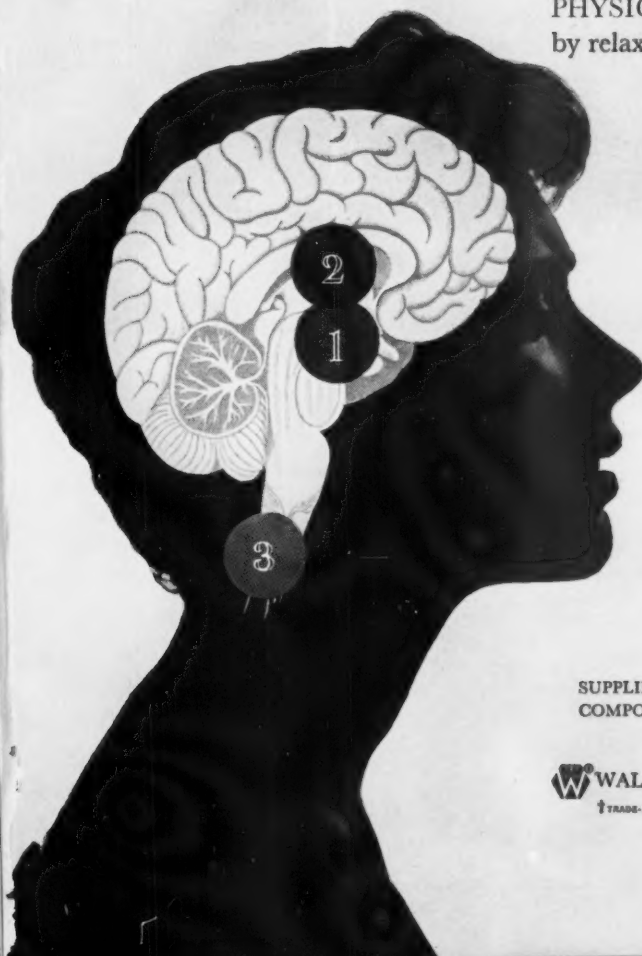
including symptoms such as crying,
lethargy, loss of appetite, insomnia

RELIEVES ASSOCIATED ANXIETY

with no risk of drug-induced depression

RELIEVES ASSOCIATED
PHYSICAL TENSION

by relaxing skeletal muscle



1

hypothalamus

2

thalamus and
limbic system

3

spinal cord

Deprol[†]

benactyzine + meprobamate

- confirmed efficacy
- documented safety

SUPPLIED: Bottles of 50 light-pink, scored tablets

COMPOSITION: Each tablet contains 1 mg. benactyzine HCl
and 400 mg. meprobamate



WALLACE LABORATORIES • New Brunswick, N. J.

[†] TRADE-MARK

CD-9390

when a tranquilizer is warranted...

MAXIMAL

Tentone

USEFULNESS

MINIMAL

MILD ATARACTICS



COMMON ANXIETY
STATES. PRENATAL
ANXIETY

ASTHMA,
OTHER ALLERGY

PREMENSTRUAL
TENSION,
MENOPAUSE

SITUATIONAL
HYSTERIA,
NEUROSIS

PEPTIC
ULCER

SEVERITY OF

The extended usefulness of TENTONE is readily apparent

TENTONE® Methoxypromazine Maleate is a new, distinctive phenothiazine... highly active... for general use in mild and moderate emotional and psychosomatic disorders.

TENTONE elicits a striking, positive calming response^{1,2}... with marked reduction of psychic disorientation, and low risk of blood, liver or other organic toxicity and intolerance.^{1,4}

TENTONE parallels the weaker ataractics in low incidence of side effects. Freedom from induced depression is apparently even greater.⁵

TENTONE provides a broadly adaptable dosage range (30 to 500 mg. daily) to permit maximum control in cases of varying severity.

TENTONE is also indicated to relieve emotional stress in surgical, obstetric and other hospitalized patients.

OTHER PHENOTHIAZINES

RHEUMATIC
DISORDERS
CONDITION

ARTERIO-
SCLEROSIS,
MALIGNANCY

ALCOHOL-
DRUG WITHDRAWAL

Dosage: Mild to moderate cases—average starting dose, one 10 mg. or one 25 mg. tablet three or four times daily. Moderate to severe—average starting dose, one 50 mg. tablet four times daily. Supplied: 10 mg., 25 mg., and 50 mg. tablets.

1. Bodi, T., and Levy, H.: Clinical report, cited with permission. 2. Wetzler, R. A., and Phillips, R. M.: Clinical report, cited with permission. 3. Prigot, A.: Clinical report, cited with permission. 4. Gosline, E., et al.: *Am. J. Psychiat.* 115:939 (April) 1959. 5. Turvey, S. E. C.: Clinical report, cited with permission.

Tentone

Methoxypromazine Maleate

Lederle

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



SEEK TO CLARIFY MD MILITARY STATUS

(Continued from Page 1768)

training unless he is a participant in a residency training program sponsored by the Armed Forces or the U. S. Public Health Service or unless the local board is convinced that the physician's services while in residency training are absolutely essential to the operation of the hospital.

CONDUCT FOUR REGIONAL HEALTH CONFERENCES

A series of four regional health conferences were scheduled in different areas of the state during October and November by the Michigan Health Council.

The regional meetings—this year only—will replace the annual Michigan Rural Health Conference. Reason for the deferment of the single annual conference is because the National Rural Health Conference sponsored by the American Medical Association will meet in Grand Rapids in 1960.

"The regional meetings will stimulate attendance at this larger meeting," MHC President Otto K. Engleke, M.D., said.

Among the features of the meetings were desk side conferences for diseases and personal chats on health careers between guest students and career experts.

The first conference was held October 29 at Northern Michigan College in Marquette. The second, November 5 at Western Michigan University in Kalamazoo. The third regional conference took place November 12 at Central Michigan University at Mount Pleasant and the last meeting in Detroit at the McGregor Memorial Conference Center, Wayne State University, on November 19.

Local medical society representatives took part in all phases of the conference.

\$174.6 MILLION GIVEN BY NIH IN PAST YEAR

National Institutes of Health awarded a total of 9,377 research grants and construction subsidies, aggregating \$174,640,724, during year ending June 30, 1959. Full details on fiscal year's record of grants and awards are supplied in annual report. This volume contains names of all grantees and titles of projects in geographical order. Next to appear will be a second part devoted to research fellowships, training grants to institutions and traineeships.

PRICE INDEX FALLS BUT MEDICAL CARE GOES UP

The all-item consumer price index declined 0.1 per cent between July and August but the "Medical Care" category rose 0.3 per cent—from 151.0

to 151.4 (1947-49—100). Bureau of Labor Statistics attributed this increase "primarily to higher rates for hospitalization insurance." If professional services alone are considered (dental as well as medical), the index for August stands at 157.0.

For the ten selected cities whose price indices were singled out in the monthly report, the range for "Medical Care" was from Cleveland's 168.1 down to 132.9 for Scranton, Pa. The others: Chicago, 159.0; Philadelphia, 158.5; Washington, 148.5; Seattle, 151.3; Los Angeles, 146.7; New York, 139.8; Houston, 135.3.

TOTAL MEDICAL CARE BILL RUNS \$23 BILLION A YEAR

In the year ended June 30, 1958, it is estimated that total expenditures for health and medical care were about \$23 billion. Private outlay is figured at \$17,294,000,000 and public expenditures, \$5,443,700,000. Construction of medical and hospital facilities accounts for about \$1 billion of total, remainder having been expended for health services, drugs and medical research. These estimates are taken from a report by Mrs. Ida C. Merriam which will appear in Social Security Bulletin for October.

Public funds accounted for 10 per cent of personal health care in 1928 to 1929 and 21 per cent in 1957 to 1958. Health insurance benefits, almost non-existent in 1928 to 1929, covered 18 per cent of personal health care by 1957 to 1958. Direct payments by consumers met 57 per cent of such costs and industrial in-plant services and philanthropy about four per cent in the later year.

FEDERAL HEALTH LEGISLATION

One major health program was launched by the United States Congress during its 1959 fall session. The Senate on September 15, voted S 2126, a contributory medical insurance plan that will cover two million Federal employees and three million dependents. The Federal government will pay half of the total estimated annual costs of \$222 million.

The 1960 medical legislation docket is expected to look very much like the 1959 list. It will include the Forand bill, the Keogh-Simpson bill and other bills calling for compulsory social security coverage for physicians. And Senator George A. Smathers (D-Fla.) may offer a bill to authorize Congress to investigate "ballooning drug costs."

PRECAUTIONS AGAINST AUTO THEFT

1. Never leave your key in the ignition when you park the car. Undoubtedly many doctors are careless in this respect, especially when hurrying into a house on an emergency call. The street looks deserted, the neighborhood looks quiet. It doesn't enter the doctor's mind that his car might not be around when he gets through with his call.

(Continued on Page 1776)

For the first time

CONVENIENCE and ECONOMY

*for that all-important first dose
of broad-spectrum antibiotic therapy*

New

TERRAMYCIN[®] brand of oxytetracycline INTRAMUSCULAR SOLUTION

Initiation of therapy in *minutes after diagnosis* with new, ready-to-inject Terramycin Intramuscular Solution provides maximum, sustained absorption of potent broad-spectrum activity.

*...and for continued, compatible,
coordinated therapy*

COSA-TERRAMYCIN[®] oxytetracycline with glucosamine CAPSULES

Continuation with oral Cosa-Terramycin every six hours will provide highly effective antibacterial serum and tissue levels for prompt infection control.

The unsurpassed record of clinical effectiveness and safety established for Terramycin is your guide to successful antibiotic therapy.

Supply:

*Terramycin Intramuscular Solution**

100 mg./2 cc. ampules

250 mg./2 cc. ampules

Cosa-Terramycin Capsules

125 mg. and 250 mg.

Cosa-Terramycin is also available as:

Cosa-Terramycin Oral Suspension — peach flavored,
125 mg./5 cc., 2 oz. bottle

Cosa-Terramycin Pediatric Drops — peach flavored,
5 mg./drop (100 mg./cc.), 10 cc. bottle
with plastic calibrated dropper

Complete information on Terramycin Intramuscular Solution and Cosa-Terramycin oral forms is available through your Pfizer Representative or the Medical Department, Pfizer Laboratories.

*Contains 2% Xylocaine[®] (lidocaine), trademark of Astra Pharmaceutical Products, Inc.

Pfizer

Science for the world's well-being™

Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc.,
Brooklyn 6, N. Y.



PRECAUTIONS AGAINST AUTO THEFT

(Continued from Page 1774)

Acquire the habit of slipping the keys out of the lock and into your pocket. The action only takes a second.

2. Try not to park on the dim side of the street. If late at night and in a strange part of town, leave your car under a street light. It may have a little deterrent effect.

3. Be careful what you do with your duplicate set of keys. Don't secrete them around the car. Thieves are pretty familiar with such tricks.

4. Give some thought to the idea of a burglar alarm system in your garage.

5. Make a note of the serial number on your car keys and then deface the numbers.

6. Do not leave your registration or driver's license in the glove compartment. If a thief is stopped by the police, he can show your registration to prove that the vehicle is his.

7. Don't tempt others by leaving packages in your car which can be seen by the casual passerby. Sometimes juvenile delinquents will break into a car just to see what is in the packages and then drive it away as an afterthought.

8. Do not leave your car parked in one place for a long time without making periodic checks. This is particularly true so far as airports, railroad stations and the like are concerned.

9. Try to claim your car immediately if it is delivered to you from a garage. Often the garage man will leave the keys hooked over the sun visor. Stealing this car would be simple.

10. Have a good lock on your garage door and be sure that the door is locked whenever your car is in the garage.

11. Do not forget to demand a claim check whenever you leave your car in a parking lot. Otherwise you have no way of proving that the car was ever left there.

"A few thoughtful acts by the physician will spare himself and the police a lot of worry and trouble. This is one form of interprofessional cooperation by which the physician has nothing to lose and everything to gain."—"The Doctor & The Law," *Newsletter*, June, 1959.

A.H.A. REVERSES STAND

The American Hospital Association, at its fall annual meeting, voted to inspect hospitals which allow osteopaths to practice under the "general supervision" of doctors of medicine. This action reverses a previous AHA stand. The inspection program is termed "voluntary," however only inspected hospitals are "listed" by the AHA and only the listed hospitals are accredited by the Joint Commission.

UMW FUND

A total of \$58 million was spent by the United Mine Workers' Welfare and Retirement Fund for medical care benefits and hospital services during its fiscal year ending June 30, 1959. The UMW fund made payments to more than 7,000 private physicians for fees. A total of 81,132 beneficiaries were hospitalized for a total of 1.3 million days. The 1958 payments ran the ten-year UMW disbursements to \$180 million to doctors and \$270 million to hospitals.

MICHIGAN MEETINGS AND CLINIC DAYS

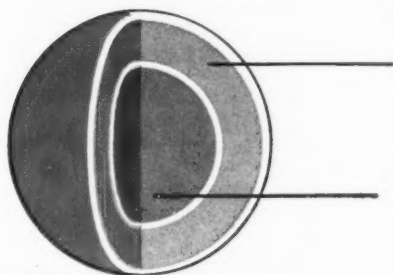
| | | |
|----------------|--|---------------|
| 1959 | | |
| November 3 | American Cancer Society, Michigan Division, District II Workshop | Adrian |
| November 5 | Michigan Regional Health Conference | Kalamazoo |
| November 11-12 | Michigan Academy of General Practice Post Graduate Clinic | Detroit |
| November 12 | Michigan Regional Health Conference | Mt. Pleasant |
| November 19 | Michigan Regional Health Conference | Detroit |
| December 1-4 | American Medical Clinical Session | Dallas, Texas |
| 1960 | | |
| January 30-31 | County Secretaries-Public Relations Seminar | Detroit |
| February 13 | Maternal Health Day | Detroit |
| February 25-27 | National Conference on Rural Health | Grand Rapids |
| March 11-12-13 | Michigan Clinical Institute | Detroit |
| April 13 | Genesee County Cancer Day | Flint |
| May 7 | Ingham County Clinic Day | Lansing |



the complaint: "nervous indigestion"

the diagnosis: any one of several nonspecific gastrointestinal disorders requiring relief of symptoms by sedative-antispasmodic action with concomitant digestive enzyme therapy.

the prescription: a new formulation, incorporating in a single tablet the actions of Donnatal and Entozyme. **the dosage:** two tablets three times a day, or as indicated.



the formula: in the gastric-soluble outer layer:

| | |
|-------------------------------|------------|
| Hyoscyamine sulfate | 0.0518 mg. |
| Atropine sulfate | 0.0097 mg. |
| Hyoscine hydrobromide | 0.0033 mg. |
| Phenobarbital (1/8 gr.) | 8.1 mg. |
| Pepsin, N. F. | 150 mg. |

in the enteric-coated core:

| | |
|------------------------|---------|
| Pancreatin, N. F. | 300 mg. |
| Bile salts | 150 mg. |

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A. H. ROBINS COMPANY, INCORPORATED • RICHMOND 20, VIRGINIA

PR REPORT

AMA PUBLIC RELATIONS INSTITUTE

"Is Medicine on the Right Track?"

Is medicine on the right track?

Is the non-scientific side of medicine keeping pace with scientific advancement?

These two questions, reports MSMS Public Relations Committee chairman R. Wallace Teed, M.D., Ann Arbor, formed the basis for discussion at the AMA 1959 Public Relations Institute held in Chicago in August.

Doctor Teed reports that keynoter Leo Brown, director of AMA's Communications Division, said it is time for medicine to take a more intense interest in what people say are the problems in the health field.

Brown continued, "Many a piece of legislation stems from what politicians claim is a 'desperate need.' Well let's find out if there is such a need. If there is, let's do something constructive about it. If there isn't, let's tell people about it."

Brown said medicine has the solutions to many of its current problems within its own hands. Physicians must do some creative thinking about the route medicine will travel in the years ahead and activate the men in the profession to play a more active role in developing resourceful programs and providing more community leadership.

He concluded that probably no professional group is less selfishly motivated but is more criticized for selfish interest than the medical profession. He said community service is one important way medicine can identify itself with public interest rather than selfish interest. Doctor Teed also reported that three different views on governmental control of medicine were presented by a German, a Canadian and an American. The three summarized the dangers of socialized medicine on the basis of their individual backgrounds.

Rolf Schlogell, M.D., of Germany, warned that "We have already resigned ourselves in too great a degree to our fate by complying with the complicated machinery of today's social life in surrendering our individual freedoms in order to guarantee a frictionless living together as a whole.

"Already many of us," he continued, "have in this way lost the ability to judge whether or not the abandonment of rights and freedoms is worth the personal price we pay." Because of the state's position in the health insurance of a nation, the German pathologist said, "it automatically loses

its neutral position as a mediator between the groups or between individuals."

Under government health systems, he pointed out, "four freedoms are restricted: 1. The freedom of the patient to choose the doctor in whom he has confidence. 2. The freedom of the doctor to refuse further treatment to the patient if the confidence each has in the other—the psychological basis in the healing of illness—is destroyed. 3. The freedom of the doctor to practice his profession according to the rules of medical art and science—free to select the suitable techniques in diagnosis and therapy and to reject those that are necessary or even detrimental. 4. The freedom of supervision of the doctor by professionally qualified groups—free from the authoritative influence of laymen."

THE CANADIAN VIEW

B. E. Freamo, Assistant Secretary of the Canadian Medical Association, described the attitudes of Canadian physicians to government medical control by the phrase, "It can't happen here." During the past two years, however, "we have had to face reality: it can happen here," he said.



"Governments have become more fiscally irresponsible," he continued. "They no longer hesitate to implement a program just because they can't afford it. This suggests the possibility that governments might, for reasons of political opportunism alone, implement a program of medical care insurance."

In Canada, he said, a system of federal government support of hospitals has won "widescale public approval."

"I cannot foresee that the art of medicine can possibly be enhanced under the conditions which must eventually be associated with government control. Further progress in the quality of medical

(Continued on Page 1782)



running noses  
and open stuffed noses orally

Triaminic[®]

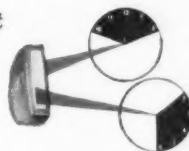
the leading oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract.

safer and more effective than topical medication^{1,2,3}

- systemic transport to all respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action... beneficial effect starts in minutes, lasts for hours



first — the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then — the core disintegrates to give 3 to 4 more hours of relief

Each TRIAMINIC Tablet provides:

Phenylpropanolamine HCl50 mg.
Pheniramine maleate25 mg.
Pyrilamine maleate25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. 112: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to 1/4 of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Blood pressure
before Apresoline-Esidrix:

206/118
mm. Hg*

Blood pressure
after Apresoline-Esidrix:

182/98 mm. Hg*

Added benefits: Lowered dosage requirements, fewer side effects • Improved renal blood flow • Relaxed cerebral vascular tone • Excellent diuresis in decompensated cases

SUPPLIED: Apresoline-Esidrix Tablets (orange), each containing 25 mg. of Apresoline hydrochloride and 15 mg. of Esidrix; bottles of 100.

*Response of 56-year-old female patient noted in clinical report to CIBA.

APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA) / ESIDRIX® (hydrochlorothiazide CIBA)

Apresoline-Esidrix®
Combination Tablets

**POTENTIATED ANTIHYPERTENSIVE
FOR ADVANCING HYPERTENSION**



IS MEDICINE ON THE RIGHT TRACK?

(Continued from Page 1778)

care is not consistent with a program which must stress equality of care."

STATUS QUO IS YIELDING

Claude Robinson, Ph.D., chairman of the board, Opinion Research Corporation, Princeton, N. J., said that since "change is the order of the day" in American society, the medical profession "should anticipate change and lead to it."

"The status quo is yielding everywhere," he observed.

The immediate goals of both medical societies and individual physicians, in Dr. Tobin's opinion, should be to improve services and cut down on complaints.

"Study the needs of the people—then meet them," he urged. "Every doctor must understand the public view as well as his own view."

He suggested that physicians look on the struggle against socialism as basically "a merchandising problem."

The principal competitor, the federal government, was described by Dr. Robinson as "a clever competitor—one that says it will give the people something for nothing."

He pointed out that the government already has prepared "a health package for the veterans, a package for the old people. If they are successful with the old people, then they will have packages for infants, teenagers, newly-marrieds, then complete socialization of health care."

In his report, MSMS PR Chairman Teed reviewed the afternoon session of the Chicago meeting dealing with Forand-type legislation. Another half-day meeting covered a suggested program for attracting talented high school and college students to the study of medicine.

Genesee Physicians Continue Project on Athletic Injuries

Seeking to protect the high school athlete from injuries, Genesee County Medical Society physicians have moved into the second step of a continuing program.

The first step of the program was a conference on athletic injuries last May. It was attended by more than 100 high school coaches and trainers.

If physical examinations find any boy unfit, he will be excluded from contact sports. In addition, explained Robert E. Anderson, M.D., chairman of the medical society's committee on school health, boys with specific defects which would make them more likely to receive certain injuries will be counseled. The counseling will help the athletes to protect themselves or decrease the chances for injuries.

A third step in the program will be the attendance of a society physician at all games. He will give first aid care and refer follow-up care to the athlete's family physician.

The program is being made available through the efforts of several groups. Besides the medical society, these include the Flint Chapter, American College of Surgeons; Mott Foundation; post-graduate training committees of Flint hospitals, and local hospital interns and residents.

Van Buren M.D.'s Paid Tribute By County Supervisors

Doctors and nurses of Van Buren County were publicly praised by the Board of Supervisors in October for their services donated during the recent countywide immunization campaign.

The published resolution paid "tribute to the dedication and selfless efforts of our medical profession and the nursing profession in this voluntary service to their community."

The supervisors directed that notice of this citation be sent the Michigan State Medical Society. It was the first such note of appreciation coming to the attention of the State Society headquarters, although many, if not all, county societies had participated in similar immunization programs.

January 30-31 Set for County Secretaries-Public Relations Seminar

County society presidents and secretaries, plus PR chairmen, will be among those invited to attend the annual MSMS County Secretaries-Public Relations Seminar in Detroit, Saturday and Sunday, January 30-31. All meetings will be held in the Sheraton-Cadillac Hotel. Meeting co-chairmen are R. M. Duffy, M.D., of Pinckney, and R. W. Teed, M.D., of Ann Arbor.

Just prior to the Seminar, an Editor's Workshop will be conducted for editors of county medical society bulletins. Chairman of the Workshop will be J. C. Heffelfinger, M.D., Coldwater.

Hospital Costs Soaring

The next several years will see hospital costs soaring, doctors' fees holding steady and medical insurance growing until just about everyone is covered for every kind of illness and accident. These predictions, based on extensive interviews with U. S. health officials and physicians, were made by *Life* magazine in the concluding article of its four-part series in October about the American doctor.

The last article quoted experts as saying that it is probably impossible to reduce the costs of running a hospital.

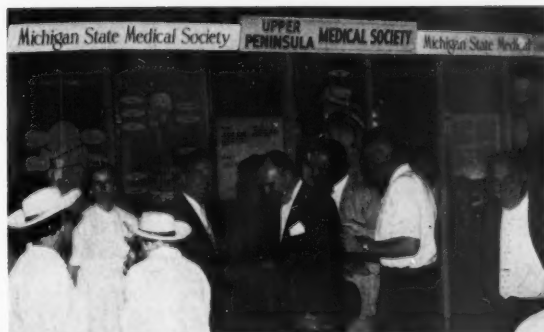
**Michigan
State Fair
Exhibit Wins
First Place**



Climaxing the 1959 exhibit season, the Michigan State Medical Society took top honors at the Michigan State Fair in Detroit for the best medical and Health exhibit. Presentation of the trophy was made by Michigan State Fair General Manager Donald L. Swanson. Accepting the award for MSMS was Council Chairman A. E. Schiller, M.D., and Sidney E. Chapin, M.D., center, exhibit co-ordinator for the MSMS PR Committee.



At the Saginaw County Fair, the Saginaw Auxiliary and Medical Assistants helped to assure success of the exhibit. Left to right are Mrs. Richard Mudd, Auxiliary; Mrs. Raymond Ludlow, Medical Assistant; Donald Sergeant, M.D., Saginaw County Medical Society president. The display theme was "A Doctor's Office."




At the Upper Peninsula State Fair in Escanaba, William A. LeMire, M.D., president-elect of the U. P. Medical Society, (center) chats with exhibit guest Paul Bagwell. High interest was evidenced by viewers at each of the four fairs at which MSMS exhibited with the co-operation of local medical societies. Equipment demonstrations were conducted by area physicians.


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References: 1. Farah, L.: *Internat. Rec. Med.* 169:379 (June) 1956. 2. Snigel, J. O., et al.: *J. Am. Geriatrics Soc.* 7:61 (Jan.) 1959. 3. Feinberg, A. R., et al.: *J. Allergy* 29:358 (July) 1958. 4. Eisenberg, B. C.: *J.A.M.A.* 169:14 (Jan. 3) 1959. 5. Maryassael, L.: *Bruxelles-méd.* 32:141 (Jan. 26) 1958. 6. Pfeiffer, R.: *Med. Klin.* 83:1030 (June 5) 1958. 7. Over 200 laboratory and clinical papers from 14 countries.

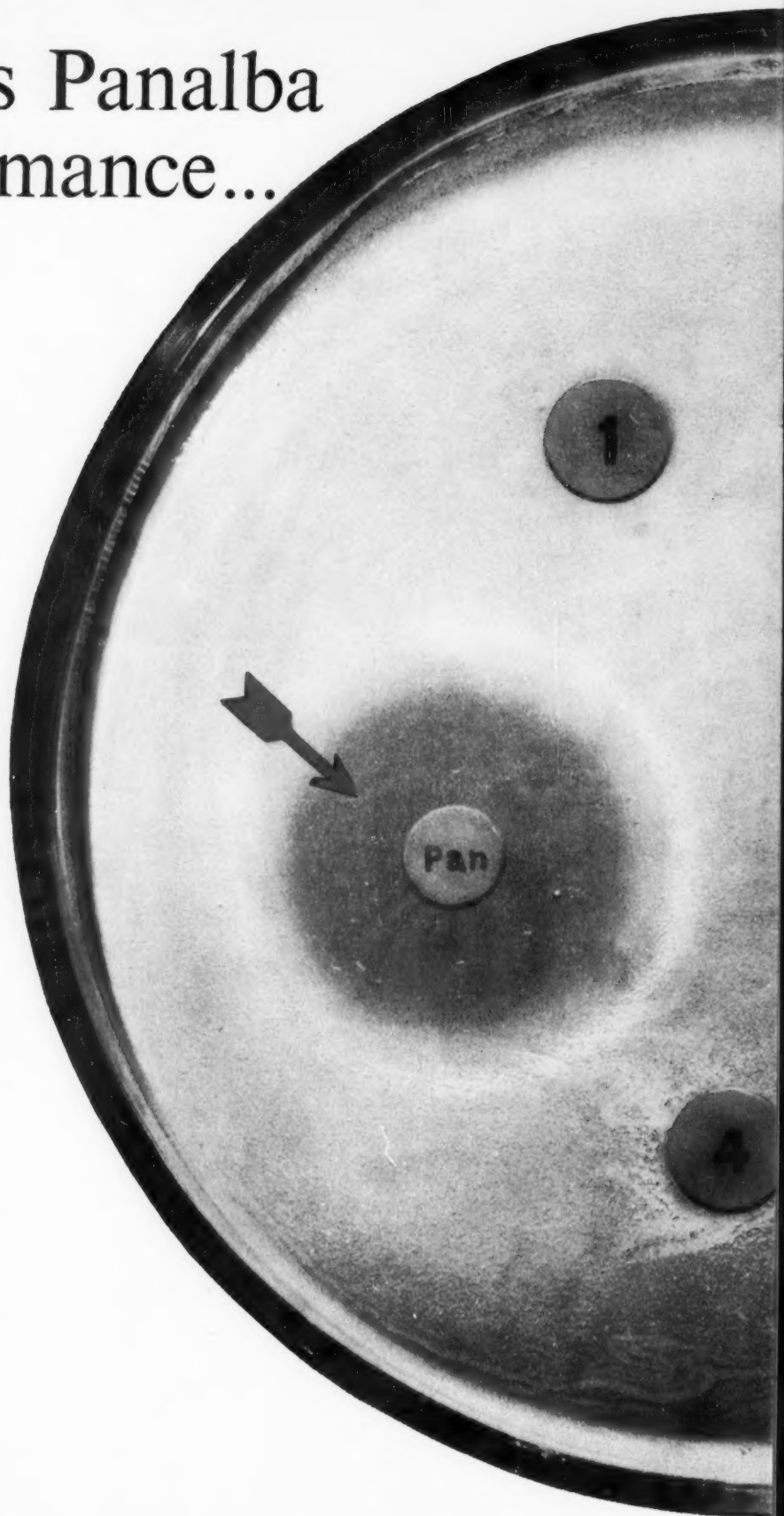
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Twelve Elected to Michigan Medical Service Board

Six new members were elected and six current members re-elected to the board of directors of Michigan Medical Service by the MSMS House of Delegates sitting as Members of the Corporation at the annual meeting of the Corporation at Grand Rapids September 29.

New members, all representing the Michigan State Medical Society, were:

Donald N. Sweeny, Jr., M.D., General Surgeon, Detroit

Ralph R. Cooper, M.D., Internist, Detroit

John W. Rice, M.D., General Practitioner, Jackson

Allan K. Cameron, M.D., Urologist, Saginaw

Michael Kozonis, M.D., Internist, Pontiac

John S. DeTar, M.D., General Practitioner, Milan. Dr. DeTar had previously served on the board of directors from 1946 to 1955.

These newly-elected members replaced W. A. Hyland, M.D., of Grand Rapids; William S. Jones, M.D., of Menominee; Ellery Oakes, M.D., of Manistee; Philip Riley, M.D., of Jackson; Walter Z. Rundles, M.D., of Flint and Ralph W. Shook, M.D. (deceased) of Kalamazoo.

Current members re-elected were:

James Gillen, director of personnel research, General Motors (public Rep.)

Robert L. Novy, M.D., Cardiovascular Specialist, Detroit (Rep. of MSMS)

James Blodgett, M.D., Cardiovascular Surgeon, Detroit (Rep. of MSMS)

A. Kent Schafer, administrator of Munson Hospital, Traverse City (Rep. of MHA)

A. C. Kerlikowske, M.D., director of University Hospital, Ann Arbor (Rep. of MHA)

Following is the complete list of the members of the Board of Directors of Michigan Medical Service:

Representing Michigan State Medical Society:

E. C. Baumgarten, M.D., Detroit; James B. Blodgett, M.D., Detroit; Allan K. Cameron, M.D., Saginaw; William S. Carpenter, M.D., Detroit; Ralph R. Cooper, M.D., Detroit; Edwin H. Fenton, M.D., Detroit; J. S. De Tar, M.D., Milan; B. M. Harris, M.D., Ypsilanti; C. K. Hasley, M.D., Detroit; W. H. Huron, M.D., Iron Mountain; Michael C. Kozonis, M.D., Pontiac; Max L. Lichter, M.D., Melvindale; G. Thomas McKean, M.D., Detroit; R. L. Novy, M.D., Detroit; John W. Rice, M.D., Jackson; Gilbert B. Saltonstall, M.D., Charlevoix; Donald N. Sweeny, Jr.,

M.D.; George W. Slagle, M.D., Battle Creek; Donald W. Thorup, M.D., Benton Harbor; Arch Walls, M.D., Detroit; John M. Wellman, M.D., Lansing; D. Bruce Wiley, M.D., Utica.

Representing Michigan Hospital Association:

Mr. Franklin D. Carr, Detroit; Roger W. Debusk, M.D., Detroit; A. C. Kerlikowske, M.D., Ann Arbor; Roger B. Nelson, M.D., Ann Arbor; Mr. A. Kent Schafer, Traverse City; Mr. Ronald Yaw, Grand Rapids.

Representing the Public:

Carleton Fox, D.D.S., Detroit; Robert A. Frye, Detroit; James M. Gillen, Detroit; John Reid, East Lansing; Waldo I. Stoddard, Grand Rapids.

WOULDN'T IT BE WONDERFUL?

If the American voter would wake up and demand an end to deficit financing even at the risk of losing a handout; if Michigan would set aside a segment of good trout stream for fly fishermen with barbless hooks and no "keepers," as Pennsylvania has done; if Congressmen could find the courage to put real restraints on the excesses of Big Labor, both criminal and moral; if either the Tigers could string two wins together, or the Yankees could catch the Detroit Disease; if adjusters for the professional liability carriers would fight every malpractice suit rather than tempt the avarice of the public with easy out-of-court settlements; if a putter could be found which would abolish the three putt green; if Khrushchev and Mao should develop a craving for Equanil and Coca-Cola; if everyone could have a tax free island in the South Seas for one month a year; if Life were indeed beautiful?—CHARLES J. RYAN, M.D., Editor *Bulletin Calhoun County Medical Society*.

COST OF LIVING INDEX

Latest report by Bureau of Labor Statistics on consumer prices discloses a wide range in the components which enter into the "Medical Care" index. Taking 1947-49 as the base period (100.0), hospital rates were 209.6 in June and, at other extreme, price of aspirin tablets was 109.1. For all elements of "Medical Care," index was 150.6. Considering services alone—everything except certain prescriptions and over-the-counter drugs—the medical cost index in June was 156.1; in other words, 56 per cent higher than it was a decade ago. Physicians' fees stood at an index of 142.3. This heading is subdivided into general practitioners and surgeons, and the respective index figures are 145.0 and 126.2. Index for dental fees is 134.6.—WRMS.



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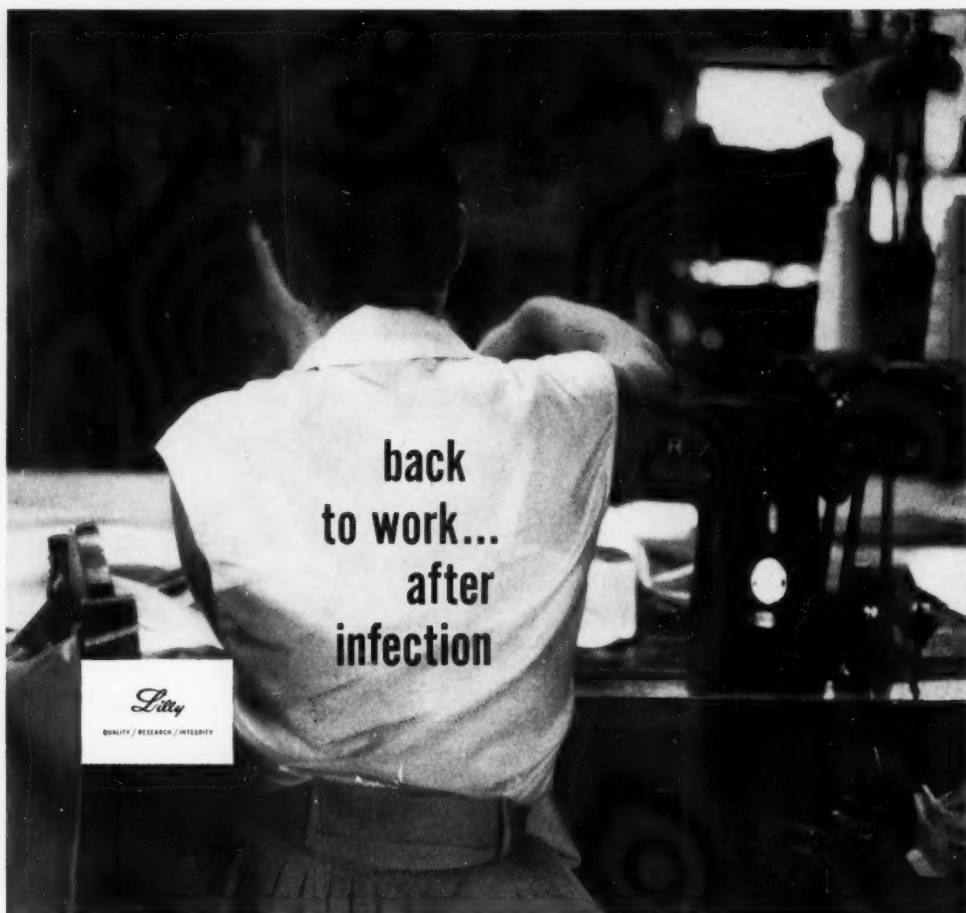


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Granulomas of the Lung

The Necessity for Early Identification

Richard A. Rasmussen, M.D.,
Richard H. Mead, M.D.,
and Clair E. Basinger, M.D.

Grand Rapids, Michigan

THE SOLITARY pulmonary granuloma is well known as an innocuous lesion, but it is frequently confused with cancer of the lung. Because of this there is a real need to emphasize the necessity of considering cancer whenever one encounters such a lesion.

A granuloma, as a solitary pulmonary nodule, is the end result of an inflammatory process. This is most often due to fungus infection, such as histoplasmosis and coccidiomycosis and least commonly, tuberculosis. The causative organism is frequently impossible to demonstrate by special bacteriologic and histologic techniques.¹

About one-third of solitary masses excised from the lung will prove to be granulomas. Nearly one-half of all such pulmonary nodules will be malignant neoplasms. The remaining lesions will be various other types of inflammation, congenital abnormalities, or benign neoplasms. They are all asymptomatic, and are found unexpectedly on survey or routine chest x-ray examination, or they may be detected in an individual, often the heavy cigarette smoker, having nonspecific symptoms, such as cough and mild production of sputum. The lesions are discrete, may vary in size from 1 cm. to 3 cm., on occasion may be multiple, and rarely show calcification. They are located peripherally in the lung fields, and other significant ab-

normalities are seldom seen with them on the x-ray. This type of lesion is easily distinguished from an active infiltrative type of tuberculous process, which is more often seen in the apex or sub-apex of the lung. The granuloma, or indeterminate lesion, may occur anywhere in the lung field. Neoplasms make up the most important group to be considered by the physician whenever an isolated pulmonary nodule is found on the chest x-ray.²

Those nodules which prove to be granulomas are of several varieties: Those caused by *Histoplasma capsulatum* and by *Coccidioides immitis*, also those caused by various less common organisms, including the tubercle bacilli. The tuberculoma is thus one of the less common types of granuloma. It should no longer be considered a prime possibility when one encounters a solitary lung lesion.

In a study of ninety-two resected, tuberculoma-like lesions, Segal *et al.*,³ using special bacteriologic and histologic techniques, found it possible to identify the causative agent in 87 per cent. Davis *et al.*⁴ were able to demonstrate an etiologic agent in 80 per cent of eighty-two granulomatous lesions.

Histoplasma capsulatum was found by both groups of investigators to be by far the most

common cause of granulomas, ranging from 55 per cent to 73 per cent. Another common fungus, *Coccidioides immitis*, was demonstrated as an etiologic agent in 7 per cent to 10 per cent of all lesions. Positive cultures for the tubercle bacillus were obtained in 3.3 per cent of the tuberculoma-like lesions by Segal. Davis, on the other hand, by utilizing special staining techniques, was able to demonstrate a higher incidence of 17 per cent. It is apparent from these studies, that the tubercle bacillus is one of the less common causes of the solitary granulomas of the lungs.

The greatest problem for the physician is the danger of confusing carcinoma of the lung with a granuloma or some other solitary lesion of the lung. They all look alike, occur in the same area of the lung, are asymptomatic and, moreover, all tend to occur most frequently in persons between forty and sixty years of age.

Because of the striking similarity of a fairly large proportion of carcinomas of the lung to the granuloma, it is imperative that the lesion be identified early. It is during this asymptomatic or "silent" period that carcinoma of the lung lends itself most favorably to excision.⁴ If the undiagnosed lesion is carcinoma, it may progress to a hopeless stage of disease before its malignant nature is recognized. Exploratory thoracotomy may be indicated immediately. An attitude of watchful waiting may be fatal.

The Differential Diagnosis

The differential diagnosis of the rounded, indeterminate density is as follows: neoplasms, both malignant and benign, inflammatory lesions due to fungi or the tubercle bacillus, and congenital lesions such as cysts. The occurrence of peripheral, primary, bronchogenic carcinoma is indeed quite frequent, and even with a surprisingly small primary lesion there may already be metastasis to the regular lymph nodes. Secondary metastatic carcinoma is less common. True bronchial adenomas occur uncommonly in the peripheral lung fields. Other benign rounded tumors such as hamartomas do occur peripherally. The granulomas usually to be considered are the result of infection due to histoplasmosis, coccidiomycosis, tuberculosis and blastomycosis. Congenital lesions have been encountered rarely. They are usually cysts. We have not seen A-V fistulas, though they do occur.

Establishing the Diagnosis

The history is usually not helpful. If symptoms are present, they are indefinite and not related to the lesion in question, unless it is a secondary tumor metastasis. However, it must be realized that such a metastasis may occur in the complete absence of signs of a primary tumor elsewhere. The physical examination is of no value except to detect other diseases. Skin tests are usually performed whenever a granuloma-like lesion is discovered by x-ray. The usual tests are done with tuberculin, histoplasmin, and coccidioidin. Blastomycin has been used occasionally. The result will vary, but a relatively high per cent of adults in west Michigan will react positively to tuberculin and histoplasmin. Reports from the Mississippi Valley area indicate a variation rate up to fifty per cent or more in some groups.

A positive skin test is no reason for assurance that a lesion is a granuloma and benign. One must remember that a skin test may be positive in the absence of a demonstrable lesion, also that a great many individuals with known carcinoma may react positively. However, a negative reaction to the usual antigens is cause for immediate assumption that the lesion is malignant, and recommendation for excision. The diagnosis should be pursued further whenever possible by laminographic x-ray examination, a technique by which the lesion may be sectioned *in situ*, so to speak. By such multiple x-ray sections of an area of lung in question, it may be possible to study the shape of the lesion further, or even to demonstrate the presence of calcification. The presence of calcium will rule out neoplasm with reasonable assurance, especially if there is also a positive skin test, although there have been recorded instances of calcification in a carcinoma. Occasionally it is possible to show lamination of the lesion, the concentric layers of calcification which are characteristic of a well-healed granuloma.

Bronchoscopy and bronchography are not very helpful in the diagnosis of the peripheral granuloma, unless it is an active tuberculous lesion, or a definite carcinoma, in which instance bacteriologic study or Papanicolaou cell study of bronchial exudate or irrigate may be diagnostic of either condition.

Exploratory thoracotomy may be necessary, and is the most reliable method of diagnosing and treating the indeterminate pulmonary lesion. This,

of course, assumes that the individual is in satisfactory condition for such surgery, and that all other indicated diagnostic tests as outlined have been performed.

tive, and x-rays had been recommended. There was no history of previous chest illness, and the physical examination was negative.

Routine postero-anterior and lateral chest x-rays of December 19, 1955, showed a discrete rounded 1.5 cm.

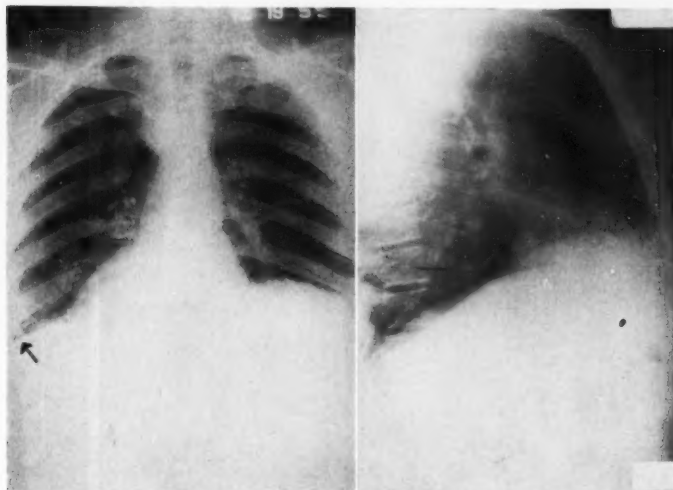


Fig. 1. (a) Chest film showing rounded lesion above left diaphragm. (b) Lateral view of film shown in (a). Note calcification.

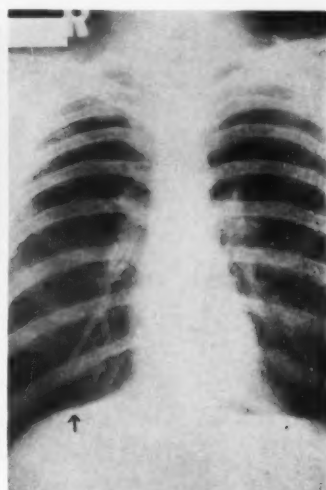


Fig. 2. Chest x-ray, September, 1952, showing non-calcified rounded peripheral density near right diaphragm.

Our own surgical experience in dealing with solitary pulmonary lesions of various types, tuberculosis in various stages, and neoplasms has been similar to that of other groups. The small, silent, solitary peripheral lesion is difficult to diagnose accurately by any method short of thoracotomy. The probability of malignancy in such lesions is almost fifty per cent. This fact alone is enough to justify consideration of surgical excision in nearly all of these cases. Carcinoma must always be excluded.

A diagnosis of granuloma is established by a positive skin test and calcification, or the latter alone, if laminated, or by a positive smear for one of the common causative organisms. However, one is not justified in waiting some eight to ten weeks for results of culture and animal inoculation before proceeding with the thoracotomy.

Case Presentations

Case 1.—A forty-five-year-old teacher and athletic coach was examined on December 29, 1955, because a well circumscribed density had been found in the left lung on routine chest x-ray examination. He was asymptomatic. A tuberculin skin test had been markedly posi-

density containing calcifications in the left base, peripherally in the lung field (Fig. 1). There was associated hilar calcification. The interpretation was benign granuloma—tuberculoma.

Treatment.—Observation was considered adequate. On subsequent x-rays on November 12, 1957, and August 28, 1959, the lesion was unchanged. Patient remains well.

Case 2.—A thirty-four-year-old physician was admitted to the hospital on September 16, 1952, for surgical excision of a rounded, uniform, non-calcified density in the right lower lung field. He had been asymptomatic, except for tiredness. A chest x-ray in September, 1952, had revealed the abnormality above the right diaphragm (Fig. 2). Fortunately, previous x-rays were available. A chest film of May, 1952, showed a small density in the same area, but it was not evident on earlier films. Routine skin tests revealed a positive reaction to histoplasmin. Surgical excision was recommended because of the possibility of tumor.

Treatment.—A wedge type of excision was done on September 23, 1952, from right lower lobe. Diagnosis: Chronic granulomata of lung—histoplasmosis. The specimen showed several grayish laminated lesions, the largest of which measured 1 cm. in size, and the smaller 1 mm. in diameter. Patient remains well.

GRANULOMAS OF THE LUNG—RASMUSSEN ET AL

Case 3.—A forty-nine-year-old man was examined on February 2, 1953, because a recent chest x-ray had revealed abnormality in the right lung. The history was essentially negative, except for a mild, moderately productive "cigarette cough" present about ten years. He

August 18, 1958, and November 25, 1958, he was advised to seek consultation. Skin tests done prior to admission were all negative.

Additional x-ray examination of the chest on January 1, 1959, revealed pulmonary emphysema and a circular

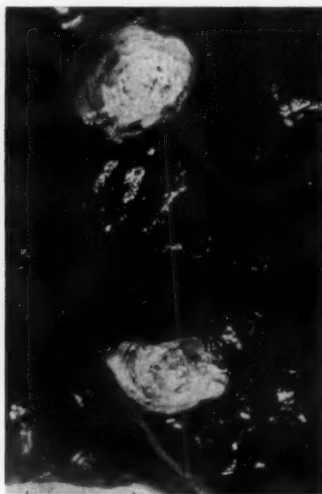
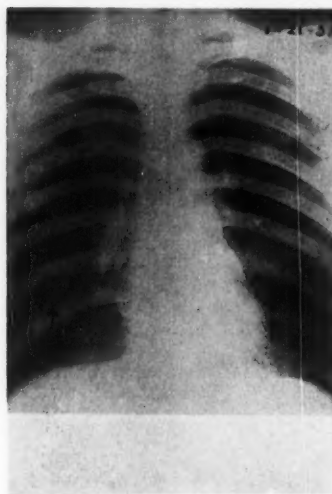


Fig. 3. (a) Chest x-ray showing rounded, non-calcified density in right 5th anterior interspace. (b) Photograph of pathologic specimen showing concentric layering of fibrous tissue and some calcification.



Fig. 4. Chest x-ray showing non-calcified rounded density in the left 3rd interspace.

had also had mild arthritis of the spine for eight years. A chest x-ray by an iron works was negative three years previously. In 1949, he had a diagnosis of peptic ulcer by x-ray. Complete recovery had followed a dietary program. The physical examination was negative. Review of x-rays dated January 19, 1952, January 21, 1953, and February 16, 1953 (Fig. 3). There was a circular-shaped density of 1.5 cm. size located in the right mid-lung field. There was some calcification in the left hilum. The interpretation was: probable neoplasm, right lung. A tuberculin skin test was a questionable positive.

Treatment.—Bronchoscopy on February 17, 1953, was negative for malignant cells. A right middle lobectomy was done on February 19, 1953, when a 2 cm. size nodule was found in the parenchyma of this lobe. Diagnosis: Nodule of almost healed chronic granulomatous inflammatory reaction. Tuberculosis? Recovered.

Case 4.—A fifty-three-year-old man was admitted to the hospital on January 9, 1959, for study and excision of a newly discovered and indeterminate type lesion of the left lung. He was essentially asymptomatic, except for moderate dyspnea on exertion, and a chronic cough. He had been a moderately heavy cigarette smoker. Previous chest x-rays were available. On April 20, 1955, the lung fields were negative. On June 28, 1958, a small rounded lesion was noted in the left third interspace (Fig. 4). Its continued presence was noted on

shadow in the left third interspace, which was thought to be due, possibly, to a granuloma. Pulmonary function studies revealed a decreased reserve.

Treatment.—Exploratory thoracotomy on January 12, 1959. Frozen section done after local excision revealed tumor. A left upper lobectomy and excision of several small nodes from the hilum and mediastinum were done. Diagnosis: Pleomorphic epidermoid carcinoma of lung, with metastatic carcinoma to hilar nodes. Recovery without present evidence of tumor.

Case 5.—A sixty-three-year-old man was examined on October 27, 1958, because of abnormality by x-rays made two weeks previously. He was asymptomatic. He gave a history of peptic ulcer two years previously. It had healed. A small carcinoma of the lower lip had been removed three years previously in Grand Rapids and there had been no evidence of metastasis. Numerous chest x-rays had been made previously. In 1954, a small, solid, discrete 1 cm. size density was noted in the right mid-lung. This was unchanged in 1957, and the lungs were negative otherwise. An x-ray of October 15, 1958, showed a rounded, nodular density of 3 cm. size above the left hilum, and a calcified density of 1 cm. size in the right lung (Fig. 5, a). Routine skin tests showed a positive histoplasmin test.

Treatment.—The patient was admitted to the hospital on November 2, 1958, for further study. Laminographic

GRANULOMAS OF THE LUNG—RASMUSSEN ET AL

x-rays of the area of the lesion strongly suggested tumor (Fig. 5, b). Other x-rays including those of the gastrointestinal tract were negative. A bronchoscopy failed to yield cancer cells on the Papanicolaou smears. A pre-

Treatment.—Left upper lobectomy and node excision on March 21, 1956. Diagnosis: Adenocarcinoma of lung without evidence of metastasis to lymph nodes. Patient remains well to date.

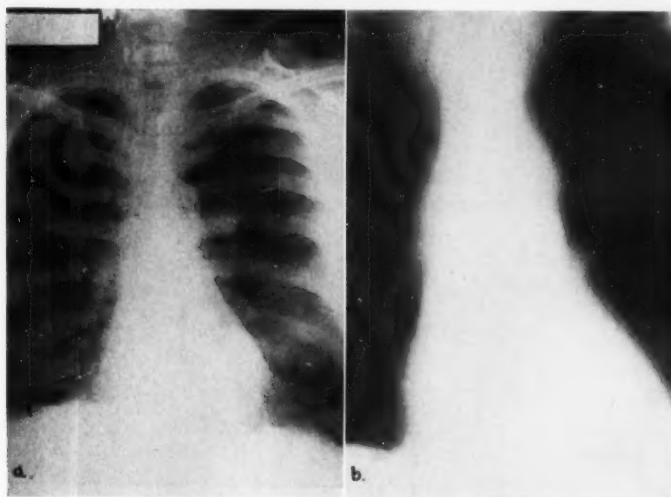


Fig. 5. (a) Chest x-ray showing rounded density in left upper hilar and mid-lung field, and smaller rounded density in right lower lung field. (b) Laminographic film showing rounded density above the left hilum.

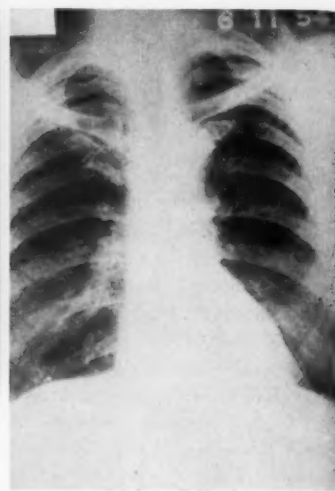


Fig. 6. Chest x-ray of 1954 showing rounded area of density in the left 1st interspace. No real change in x-rays of 1956.

scalene node biopsy showed chronic, non-specific lymphadenitis. Exploratory thorotomy on November 10, 1958, revealed a 4 cm. sized rounded, peripherally-located tumor in the left upper lobe. There were several enlarged mediastinal lymph nodes which, on examination, showed metastatic carcinoma. A left upper lobectomy and hilar mediastinal node dissection were done. Diagnosis: Undifferentiated bronchogenic carcinoma with metastasis to regional lymph nodes. Patient recovered and so far has not shown evidence of residual or other metastasis.

Case 6.—A sixty-seven-year-old man was admitted to the hospital on March 20, 1956, for surgical exploration of the left chest because of an undiagnosed lesion in the left upper lobe. He had been relatively asymptomatic for his age and the physical examination was not remarkable. Review of the recent x-rays of January 5, 1956, and March, 1956, showed a fairly discrete area of increased density measuring 2 to 3 cm. in the left upper lobe. X-rays in 1953, and 1954, had shown a similar, slightly smaller lesion (Fig. 6). A tuberculin test at that time was positive, and routine bacteriologic tests had been negative. The patient had declined additional consultation. On January 1, 1956, he had been admitted to the sanatorium for additional study and treatment. Bronchoscopy and study for carcinoma cells were negative. Anti-tuberculous treatment was started and continued to March, 1956, on the assumption that the lesion might be tuberculous. In the absence of confirmation, exploratory thoracotomy was recommended.

Discussion

It is evident, as one can see from the foregoing case histories and x-rays, that it is difficult to make an exact diagnosis of the solitary pulmonary nodule. The three granulomas and three carcinomas were found unexpectedly by x-ray of asymptomatic individuals, all in the "cancer age." The lesions are similar in appearance. In making the diagnosis, we used the following criteria to determine whether or not the nodule was a granuloma: (1) Positive skin test and calcification, (2) Calcification alone, if laminated, and (3) positive smear of the causative organism. If, after applying these criteria, there was doubt as to the nature of the nodule, we resorted at once to the *exploratory thoracotomy*. This permitted a diagnosis and, more importantly, the removal of an early carcinoma, if present.

In one case, the first, we were able to diagnose a granuloma, using the criteria listed above. In all the rest of the cases, exploratory thoracotomy was done. All patients are living and well, the three carcinoma patients apparently well from eight to forty-two months after resection.

(Continued on Page 1806)

Treatment of Pulmonary Tuberculosis with Seromycin

Anthony F. Stiller, M.D.,
and Winona Barrows, M.D.
Kalamazoo, Michigan

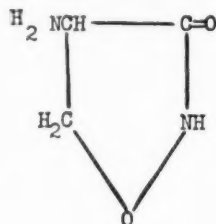
IN RECENT years the standard treatment of pulmonary tuberculosis is to use streptomycin, isoniazid and PAS along with complete or modified bed rest, depending on the extent and severity of the involvement. To use these drugs most effectively, they must be used in combinations such as isoniazid and PAS, streptomycin and PAS or streptomycin and isoniazid. Results obtained to date, show that the combination of isoniazid and PAS is most effective—the other combinations, although producing satisfactory results in many instances, are found to be less effective to a certain degree. There is, however, an urgent need for additional drug regimens, because of frequent development of drug resistance or of undesirable side effects to the use of the above drugs. Drug resistance to streptomycin is frequent and severe gastro-intestinal irritation is often produced by PAS. If these drugs cannot be used, experience indicates that isoniazid alone is not sufficiently effective in chronic advanced disease; an ancillary drug of proved effectiveness is needed with it. Consequently, other drugs and drug combinations have been tried as replacements when the three main medications have, for any reason, lost their usefulness to the patient.

In 1954, Eli Lilly & Company joined Commercial Solvents Company in a clinical investigation of a fermentation product of *Streptomyces Orchidaceus*, discovered by the latter company. This product was given the generic name of Cycloserine and the Lilly product is called Seromycin.[®] Seromycin was introduced as an alternative drug to which patients with tubercle bacilli resistant to other agents might still respond. Studies show that tubercle bacilli do not rapidly become resistant to Seromycin.

Chemistry

Seromycin is a white crystalline powder with a melting point of 155° C. It is soluble to water at 25° C. to the extent of 100 mg. per ml. The

molecular weight of the antibiotic is 102. The structural formula is as follows:



D-4-amino-3-isoxazolidinone

Pharmacology

The toxicity of Seromycin is of the same order as that of potassium penicillin-G following intraperitoneal, subcutaneous and oral administration to albino mice.³ Seromycin is less toxic than potassium penicillin-G following intravenous injection. Rats tolerate doses of Seromycin as great as 5 Gm. per Kg. orally or subcutaneously, and guinea pigs survived after subcutaneous doses of 2 Gm. per Kg.

Welch *et al*² selected forty normal ambulatory human subjects and divided them into four groups. Group One received 250 mg. of Seromycin; Group Two received 500 mg. of Seromycin; Group Three received 750 mg. of Seromycin; and Group Four received 1000 mg. of Seromycin in capsule form. At four, eight, twelve and twenty-four hours following administration of the medication, blood samples were collected. The total output of urine over a forty-eight hour period was also collected. In Figure 1 are shown the average blood concentrations of Seromycin obtained in these subjects. Figure 2 shows urinary secretions of Seromycin and Figure 3 the cumulative excretion of Seromycin from these subjects. Spinal fluid concentrations of Seromycin approximated closely those obtained in blood. These relatively high blood and urine concentrations, theoretically, should be conducive to good antibacterial effect in the treatment of tuberculosis.

Contra-Indications and Side-Effects

Seromycin is contra-indicated in patients with a history of epilepsy. Side-effects such as somnolence, dizziness, and mental confusion may appear fol-

lowing administration of 1 Gram or more of Seromycin daily. Convulsive seizures, varying from petit mal to grand mal, have been observed in about 8 per cent of patients receiving 1 Gram per day,¹⁵ and in only 3 per cent receiving 750 mg. per day. Convulsive seizures have been rare with a daily dose of 500 mg. If one should encounter a convulsion with the 500 mg. dosage,

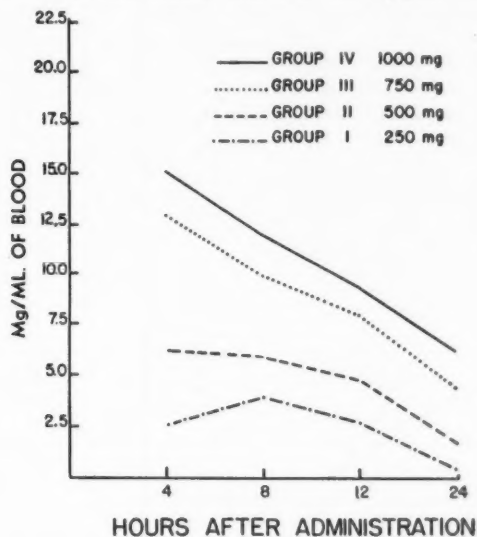


Fig. 1. Average blood concentration of Seromycin.

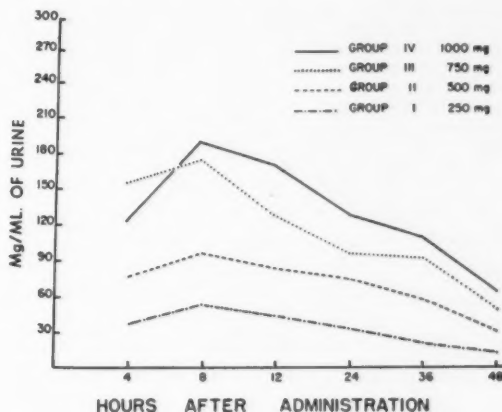


Fig. 2. Urinary excretion of Seromycin.

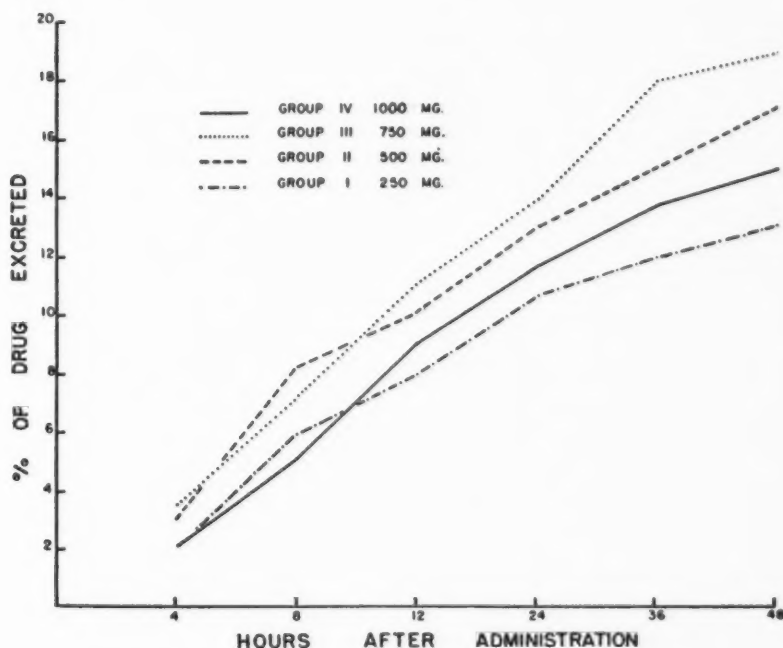


Fig. 3. Cumulative urinary excretion of Seromycin.

TREATMENT OF PULMONARY TUBERCULOSIS—STILLER AND BARROWS

TABLE I.

| Case Number | Patient | Age | Sex | Race | Duration of Disease | Extent of Disease | Cavity: Single or Multiple | Original or Re-treatment Case | Susceptibility to Previous Drugs Used | Drugs Used During Study (Daily Dose) | Duration of Treatment During Study | Sputum Status At Start of Study | Sputum Status At End of Study | X-Ray Results at End of Study |
|-------------|---------|-----|--------|------|--------------------------------|---------------------|----------------------------|-------------------------------|---|---|------------------------------------|------------------------------------|-------------------------------|--|
| 1 | E.O. | 68 | Male | W | 11 yrs. | F.A. with Silicosis | Single 5 cm | R | Strep=R PAS=R INH=Partial R | Seromycin 500 Mg INH 300 Mg | 17 months | Positive | Positive | Cavity 2 cm Smaller |
| 2 | F.C. | 43 | Male | W | 15 yrs. | F.A. | Multiple 4 cm | R | Strep=R PAS=S INH=R | Seromycin 500 Mg INH 300 Mg | 2 months | Positive | Positive | Worse |
| 3 | P.S. | 47 | Male | W | 4 yrs. | F.A. | Multiple 2 1/2 cm | R | Strep=R PAS=R INH=Partial R | Seromycin 500 Mg INH 300 Mg | 17 months | Positive | Positive | No change |
| 4 | R.K. | 56 | Male | W | 3 yrs. | F.A. with Silicosis | Single 3 cm | R | Strep=R PAS=R INH=Partial R | Seromycin 500 Mg INH 300 Mg | 3 months | Positive | Positive | No change |
| 5 | H.R. | 47 | Male | C | 5 yrs. | F.A. | Multiple 3 & 4 cm | R | Strep=R PAS=R INH=Partial R | Seromycin 500 Mg INH 300 Mg | 17 months | Positive | Positive | Decrease size of cavity Rt.; Increase cavity Lt. |
| 6 | R.S. | 62 | Male | W | 6 yrs. | F.A. | Single 5 cm | O | Strep=R INH=S PAS=R | Seromycin 500 Mg INH 300 Mg | 17 months | Positive | Negative | Closure of cavity Cleared disease. |
| 7 | M.O. | 64 | Male | W | 4 yrs. | F.A. | Single 7 cm | R | Strep=? INH=? PAS=? | Seromycin 500 Mg INH 300 Mg | 17 months | Negative | Negative | Cavity decreased 2 1/2 cm |
| 8 | W.D. | 48 | Male | W | 3 yrs. | F.A. | Single 7 cm | R | Strep=S INH=S PAS=S | Seromycin 500 Mg INH 300 Mg | 15 months | Positive | Positive | Worse |
| 9 | E.D. | 52 | Male | W | 2 yrs. | F.A. | Single 2-3 cm | O | Strep=S INH=S PAS=S | Seromycin 500 Mg Strep. 1 Gm. Twice a week | 17 months | Positive | Negative | Arrested |
| 10 | A.H. | 60 | Male | W | 1 yr. | F.A. | Multiple 3 cm | R | Strep=S to 50 Mcgs INH=S to 10 Mcgs PAS=R | Seromycin 500 Mg INH 300 Mg | 14 months | Positive | Positive | Moderate improvement noted |
| 11 | E.M. | 37 | Male | W | 3 yrs. | F.A. | Multiple 3 cm | R | Strep=S to 50 Mcgs INH=S to 10 Mcgs PAS=S to 100 Mcgs | Seromycin 500 Mg INH 300 Mg | 11 months | Positive | Positive | Worse |
| 12 | C.S. | 61 | Female | W | Many yrs. with 2 reactivations | M.A. | None | R | None reported because of neg. sputa after adm. | Seromycin 500 Mg INH 300 Mg | 11 months | Positive (1 g.p. before admission) | Negative | No change |
| 13 | J.K. | 48 | Male | W | 2 yrs. | F.A. | Single 6-7 cm | O | Strep=S INH=S PAS=S | Seromycin 500 Mg INH 300 Mg | 11 months | Positive | Negative | Good improvement |

the patient should be suspected of having a history of epilepsy or poor excretion of the Seromycin due to poor renal function.

Because Seromycin is excreted in the urine in very high concentrations, it should be administered with caution and in lower dosage to patients with impaired renal function. Usual therapeutic doses of the drug might easily give rise to high blood plasma concentrations in such patients and increase the risk of serious side-effects.

There has been no evidence noted of any increase in side-effects when Seromycin has been used in combination with either isoniazid or streptomycin.

Our Study

Our study, therefore, limited itself entirely to the daily use of 500 mg. of Seromycin with 300 mg. of isoniazid, or of 500 mg. of Seromycin daily in combination with 2 or 3 Gms. of Streptomycin per week. All patients in our study had PSP kidney tests and BSP liver tests, and only those with good kidney and liver function were chosen. Perhaps because of this precaution only one mild side-effect was noted in our series. This patient exhibited blurred vision, wavy image, dizziness and slight muscle jerking of the extremities of only very short duration, approximately from one-half to three-quarters of an hour.

A total of thirteen cases were used in our study. Ten had chronic active disease and were re-treatment cases. Two were new cases of pulmonary tuberculosis just discovered. One patient, although a new case, could not tolerate isoniazid or PAS and was therefore given Seromycin, 500 mg. daily and streptomycin, 3 Gms. per week. This patient's bacilli, however, were sensitive to all of the three standard anti-tuberculosis drugs. The second new case had no contra-indications or poor tolerance to the three standard drugs and was given 500 mg. of Seromycin and 300 mg. of isoniazid daily. The third new case, although a re-activation with bacilli resistant to streptomycin and PAS but still sensitive to isoniazid, was given Seromycin 500 mg. daily and 300 mg. of isoniazid daily. His active disease was a 2 cm. cavity in a segment of lung previously uninfected by tuberculosis and was the only active disease present in both lungs. He is, therefore, included in the category of original treatment cases.

Table I shows the results of our study. As in other series of original treatment cases reported, our patients also did well. They are listed as Cases

6, 9 and 13 in Table I. All arrested their tuberculosis and today enjoy good health, reunited with their families.

Three patients receiving re-treatment (Cases 1, 7 and 10 in Table I) showed improvement during the study. As a result of treatment with other drugs and surgery following the study, two of the three may be able to achieve an arrest of their disease. These are truly salvage cases. The third, although improved during the study, now remains a stationary active case.

One patient (Case 11), while receiving Seromycin and isoniazid for a period of eleven months of this study, filled a cavity in the right lung but was considered as becoming worse because of an increase in size of a cavity in his left lung. Even though the sputum was continuously positive, the left lung cavity was resected, and after a suitable period of negative sputum, the filled cavity on the right was also resected. This patient, now discharged for six months, continues to receive streptomycin 2 Gms. per week and Seromycin 500 mgs. daily on an outpatient basis. Outpatient study shows him to continue arrested.

Another patient (Case 5) in this study was also considered to be worse because of increasing size of a cavity in the left apical posterior segment. After several surgical procedures and treatment with other anti-tuberculosis drugs, he now has had some negative sputum reports and may in time arrest his disease.

Another patient (Case 12) had only one positive sputum report by guinea pig study. Seromycin will be credited with the conversion to negative, though it is possible, of course, that the isoniazid given with the Seromycin might also have achieved this result.

Two patients (Cases 3 and 8) did not benefit from use of Seromycin. One patient (Case 3) remains a stationary chronic while another (Case 8) is showing steady deterioration, despite the fact that various other combinations of anti-tuberculosis drugs have been tried.

Two patients (Cases 2 and 4) remained in the study for two and three months only. They grew worse clinically, refused further participation in the study and expired shortly after withdrawal from the study. They were considered terminal cases at the outset. One patient (Case 4) expired from Cor pulmonale while another (Case 2) expired from his tuberculosis.

Discussion

The participants in the study demonstrated resistance to isoniazid ranging from 1 mcg. to 50 mcg. The one case receiving streptomycin showed a resistance to 10 mcg. of this drug. All the participants, previous to the study, did not respond satisfactorily to the use of combinations of standard anti-tuberculosis drugs.

When Seromycin was used with isoniazid or streptomycin, it often appeared in this study that improvement occurred in proportion to the degree of bacillary sensitivity to the streptomycin or isoniazid. The greater the resistance to the latter drugs, the less improvement was noted. Use of Seromycin alone in a series of re-treatment cases is needed to determine its effectiveness in producing the above results. If Seromycin could be made less toxic so that a larger dose could be used, it might also show more effectiveness. Such studies are now being done.

Summary

Thirteen cases of pulmonary tuberculosis were treated with a new anti-tuberculosis agent—Seromycin (Cycloserine-Lilly Co.)—in combination with known standard anti-tuberculosis drugs. Ten were re-treatment cases (old cases) and three were original treatment cases.

The original treatment cases all became arrested. The Seromycin combinations used were much less effective in the chronic disease cases (old cases). Where a good effect resulted in retreatment cases, the role of the second drug used with the Seromycin must well be considered.

Acknowledgment

For the use of Figures 1, 2, and 3, acknowledgment is made to Welch, Henry, Putnam, L. E., and Randall, W. A.: Antibacterial Activity and Blood and Urine Concentrations of Cycloserine, A New Antibiotic, Following Oral Administration. *Antibiotic Med.*, 1:72 (February), 1955.

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Tuberculin Sensitivity in Michigan Children

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THE CHANGING tuberculosis picture in our communities is making the tuberculin test an exceedingly important item in the examination and diagnostic armamentarium of the practicing physician. Years ago when, it was felt, the bulk of the population had had experience with tuberculosis to some degree, medical opinion held that nearly everyone would react to the Mantoux test and there was little point in using it. That this was more pessimistic than it probably should have been, is supported by a limited study in Wisconsin in 1927,¹ in which it was determined that the reactor rate for 468 children was about 20.5 per cent. As will be shown subsequently, the tuberculin reactor rate for children in Michigan is considerably below this point at the present time.

The tuberculin test, using the Mantoux technique, offers the practicing physician a rapid and economical method through which to perform an accurate screening service to his patients. As a report on the patient's permanent record, an annual negative tuberculin response can become of very great importance as a diagnostic tool in the evaluation of a pulmonary lesion newly appearing in the chest film. If the tuberculin test has converted from negative to positive within a reasonable period of time, it strongly suggests that the lesion under question is tuberculous in nature; in an adult, under these circumstances, a continued negative tuberculin reaction raises the question of a neoplasm or fungus infection. Of course, the importance of follow-up of tuberculin reactors at any age goes without saying. For many years the pediatricians have incorporated the tuberculin test in their pre-school and annual examinations of children, as long as the test remained non-reactive. That this test may properly fit into not only the office practice, but also the hospital practice of the physician seems to be apparent. By using the test administration technique developed for tuberculin surveys in school children and industrial em-

ployes, or a modification thereof, the physician's time and cost can be reduced to a minimum and still produce this valuable item of information on his patient.

With the apparently declining incidence of tuberculosis and the changes in treatment patterns, it has been suggested that the role of the practicing physician will assume increased importance in the control of this disease. The physician's office and the general hospital are still, and will continue to be, the most important sources of newly discovered cases of tuberculosis. Any easily available tool which will assist him in the evaluation of his patients in relation to tuberculosis should find favor with him. The purpose of this paper is to briefly describe the multiple-dose syringe and the flamed platinum needle method of test administration which, it is felt, can be easily adapted to the physician's office and the general hospital, and to report on the tuberculin sensitivity of Michigan school children, as determined by a survey covering some 250,000 students. This survey was carried out on a co-operative basis, with the participants including local medical societies, school authorities, and health departments, and the state health department.

In 1952, the Michigan Department of Health reviewed the results of its mobile x-ray survey activities in terms of the number of active cases of tuberculosis being found through the 70 mm. photofluorographic examination of high school students. At that time, policy permitted that high schools would be included in mobile surveys, with the unit actually located at the school. The review led to the decision to discontinue the use of this technique as a case finding procedure oriented to the schools and this was followed in 1956, by a decision to discontinue all photofluorographic examination of persons under eighteen years of age, except those high school students known to be tuberculin reactors in areas where 14 x 17-inch films were difficult to obtain. By 1956, interest was developing in the substitution of the Mantoux

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test as the device through which school children would be screened initially for tuberculosis.

The purposes for encouraging the use of the tuberculin survey among the schools were multiple. To begin with, it was felt that the school children represented a key to the tuberculosis status of the communities from which they came. A high tuberculin reactor rate in the children would support the belief that there was a relatively large tuberculosis reservoir among the adult population and, conversely, a low reactor rate would indicate a relatively smaller tuberculosis problem. Furthermore, a comparison of the tuberculin reactor rates of the various communities within a particular county should be of value in determining which of these communities required additional tuberculosis control activity. The tuberculin survey could be expected to assist, then: (1) To determine the tuberculosis infection rate—helping to sort areas by relative seriousness of the problem; (2) to provide a basis over a period of time on which to assess the progress, or lack of progress, of tuberculosis control activities; (3) to identify for further follow-up evaluation those children already infected; (4) to provide a point of departure for tuberculosis case finding through the follow-up of adult contacts to tuberculin reactors.

While a number of Michigan counties have had Mantoux testing programs for varying periods of time, the Michigan Department of Health became actively engaged on an extensive basis in 1956; during the 1958-1959 school year, programs in which it has been a participant, have administered 272,827 Mantoux tests. Of these, approximately eighty per cent were initial tests and the remainder was subsequent testing of previous non-reactors a year later in the original situation.

The Mantoux test was selected over the patch test because of its greater accuracy.² Old Tuberculin in the amount of five Tuberculin Units (0.1 ml. of a 1:2,000 dilution) was used for each test, and the reading was made at the end of forty-eight hours. The measured quantity of the preparation was administered on the volar surface of the forearm, using tuberculin syringes and platinum needles; the needles were flame-sterilized between injections. Reaction at the site of the injection was measured and induration of 5 mm. or more in the shortest diameter was considered positive.

Question has been raised as to the possibility of transmitting homologous-serum jaundice by the

TABLE I. RESULTS OF ADULT TUBERCULIN TESTING IN TWO MICHIGAN INDUSTRIES
M—male; F—female; T—total.

| | Age 18-44 | | | | Age 45+ | | | | Total | | | |
|-------|------------------|----------|------|------------------|----------|------|------------------|----------|------------------|----------|---|--|
| | Tested & Read | Reactors | | Tested & Read | Reactors | | Tested & Read | Reactors | Tested & Read | Reactors | | |
| | | No. | % | | No. | % | | | | No. | % | |
| M | 4,569 | 904 | 19.8 | 1,187 | 445 | 37.5 | 5,756 | 1,349 | 23.4 | | | |
| F | 958 | 66 | 6.9 | 188 | 28 | 14.9 | 1,146 | 94 | 8.2 | | | |
| Total | 5,527 | 970 | 17.5 | 1,375 | 473 | 34.4 | 6,902 | 1,443 | 20.9 | | | |
| M | 531 | 83 | 15.6 | 222 | 74 | 33.3 | 753 | 157 | 20.8 | | | |
| F | 615 | 61 | 9.9 | 251 | 64 | 25.5 | 866 | 125 | 14.4 | | | |
| Total | 1,146 | 144 | 12.6 | 473 | 138 | 29.2 | 1,619 | 282 | 17.4 | | | |

use of the multiple dose syringe. In practice, the flamed platinum needle technique requires that the tip of the needle be heated to red heat in a flame (alcohol or gas flame) and the needle shaft refilled with tuberculin by depressing the plunger between each injection. Using this method, there have been no reported instances of homologous-serum jaundice transmission through tuberculin surveys.

In relation to the interpretation of the positive test, it is important to note that there are differences of opinion as to the minimum reaction size which should be accepted as a positive test. It has been suggested that, while there is little dispute as to the significance of the reaction of 10 mm. or more, induration of 6 to 9 mm. probably represents a weakly positive reaction and here there is considerable uncertainty as to the proper interpretation.³ A special committee is presently giving consideration to this matter⁴ but inasmuch as this situation had not been clarified by the beginning of the 1958-1959 school year, the old standards were allowed to apply.

Figure 1 is a graphic presentation of the skin testing results from 92,344 children tested and read in grades one, four, seven, and ten in twenty-four Michigan counties during the 1958-1959 school year. In those schools where all grades were tested, the four grades listed above were combined with the results from those schools in which only these grades were tested. The tested and read group represents 78.7 per cent of the total enrollment in these four grades in the schools tested. Previous experience in tabulating the results by sex indicates that, in the school age group, the difference between the reactor rate of the two sexes is so slight as to be negligible.

In nearly every instance, it is important to note that the proportion of participants in a school

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tuberculin testing survey decreases as the grade increases; i.e., there is a greater participation proportionally in the first grade than in the tenth. In spite of this, the proportion of students tested in

A limited number of adults in "captive groups" were surveyed with the Mantoux test and the results are shown in Table I.

While it is not suggested that these adults rep-

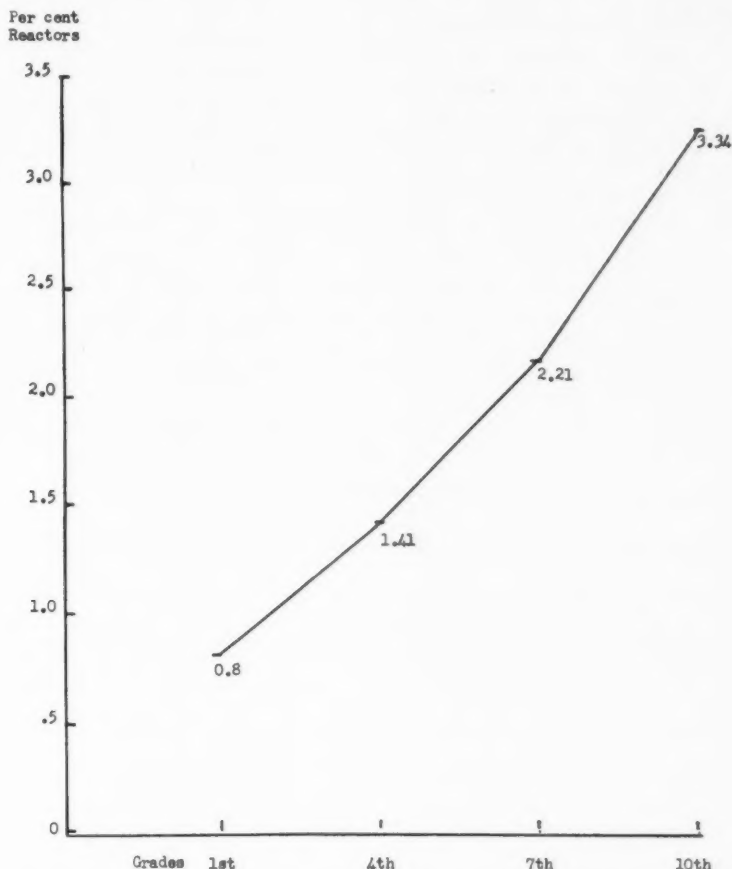


Fig. 1. Reactor rates for 92,344 children in twenty-two Michigan counties during 1958-1959 school year.

all tenth grades in the tested schools was 66.1 per cent of the enrollment. It is also important to note that all reactors previously known to the health department as a result of examination of contacts to a case were counted.

In sixteen counties in which all grades were tested (116,610 students) the elementary grades of kindergarten through the eighth grade showed a reactor rate of 0.9 per cent and the high school grades of nine through twelve showed a reactor rate of 1.9 per cent; the combined reactor rate was 1.1 per cent.

resent a cross section of industrial employees, it is interesting to note that the infection rate for men appears to be considerably higher than for women and, in this, parallels the situation for clinical disease as represented by the occupancy of our tuberculosis hospitals. It further suggests that tuberculin sensitivity among adults is sufficiently infrequent so as to make the test valuable in the differential diagnosis of pulmonary disease.

From the standpoint of tuberculosis control, the variations in the reactor rate among various areas or communities in the state can be of consider-

able assistance in indicating those situations in which intensified case finding should be carried out. In one rural county, for example, a tuberculin survey was carried out in which 83 per cent of the total school enrollment was tested, with a reactor rate of 1.92 per cent. In one small community, however, the rate was 6 per cent for the school children and rose to 31.8 per cent in the twelfth grade. It was obvious that there was open tuberculosis in the community and examination of the reactors and their contacts turned up three cases of active tuberculosis among the reactor children and six cases among their adult contacts—including one who operated a lunch counter frequented by the high school students.

Summary

1. The suggestion is made that the Mantoux test be used more extensively as a screening and diagnostic tool in physicians' offices and in general hospitals.

2. Attention is called to the simplicity of the flamed platinum needle and multiple dose technique which is readily adaptable to the office practice of medicine.

3. Figures are presented showing that tuberculous infection in school age children is much lower than was previously thought, and suggesting that infection in adults is low enough to make the tuberculin test of value in the differential diagnosis of pulmonary disease and as an indicator of possible non-pulmonary tuberculosis.

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PRACTICE OF SURGERY IN A NEUROPSYCHIATRIC HOSPITAL

Psychotic patients present special difficulties in both diagnosis and treatment, yet thirteen years of experience in a neuropsychiatric veterans hospital have shown that the presence of a psychosis does not alter the physical signs of disease and does not preclude the obtaining of a medical history or the administration of modern therapy. In surgical cases, preoperative management includes due preparation for all the experiences in the operating room; consent to operation has been refused only in extremely rare instances, and it is no longer necessary to struggle with patients to get them anesthetized. When the cooperation of a patient is needed for operations under local anesthesia, preoperative medication generally should be minimal. The postoperative course is usually uneventful, but it is necessary to remember that the psychotic patient seldom complains of pain, is not likely to be careful with tubes and catheters, cannot be counted upon to cough up secretions, and may attempt ambulation too soon. The psychiatric behavior of the patient is especially important in orthopedic surgery because splints, casts, and traction apparatus may

be tampered with or misused as lethal weapons by assaultive or suicidal patients. Trusses, braces, colostomy bags, and ambulatory urinals are unsuitable for most psychotic patients, and with patients potentially suicidal the triangular bandage, the elastic bandage, lengths of roller bandage or adhesive tape, as well as clips or safety pins, must be avoided. Difficulties with urination and defecation have frequently been found to be an expression of the psychosis itself, but the two functions interfere with each other in the sense that a greatly distended bladder has at times been found to prevent evacuation while in other cases fecal masses in patients with megacolon have caused urinary retention. Cataract extractions have been successful in nineteen psychotic patients, with definite changes for the better in ten patients whose improved vision greatly increased their capacity for self-care. The presence of a full-time surgeon in a neuropsychiatric hospital has been shown to result in a low surgical mortality rate; it also is reassuring to the patients and their families.—MARCHAND, WALTER E.: *AMA Arch. Gen. Psychiat.*, 1:123-131 (Aug.) 1959.

Tuberculosis Coexistent with Lung Cancer and Fungous Disease

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THE PROPENSITY for malignant disease of the lungs to mimic in clinical and x-ray patterns such diseases as tuberculosis, pneumonia, fungous diseases, and a wide variety of other chest abnormalities has been well established and documented in the medical literature of the last twenty-five years. Somewhat less frequent reports of important lung disease coexisting with pulmonary tuberculosis and bronchogenic tumors are appearing, and the subject is gradually getting more deserved attention. A. J. Christoforditis and R. H. Browning summarized some of the old theories, as well as the current diagnostic thinking on this subject, and reported ten cases of pulmonary tuberculosis occurring in patients with bronchogenic cancer. Their cases illustrate again some of the important x-ray criteria pointed out by Rigler *et al*—particularly in reference to the enlargement of the hilar region which is probably the most frequent single x-ray feature common to a number of these cases.

Over a ten-year period we have had occasion to observe fifteen cases of pulmonary tuberculosis that were complicated by the simultaneous occurrence of bronchogenic carcinoma. The mortality in this group of patients has been one hundred per cent, attesting to the obvious fact that more care and attention should be given to the possibility in any proven case of pulmonary tuberculosis that other important and perhaps more deadly pathology may be present.

Just as tuberculosis may be associated with bronchogenic tumors, bronchiectasis and pneumonia, we have in two cases seen it associated with active fungous disease, on one occasion involving actinomycosis, and in the other, North American blastomycosis. In the first instance, while the patient was under investigation for infiltration in the lungs which ultimately proved to be tuberculosis, he developed mediastinal and paraspinal enlargement and thereafter evidence of dorsal spinal cord pressure. A visible swelling also occurred in the dorsal deep back musculature, and on repeated aspiration of this fluctuant mass actinomycosis *bovis* was re-

covered on cultures. This aspect of the case was treated by local installations of penicillin as well as parenteral penicillin and sulfadiazine. The response was excellent and the cord pressure symptoms cleared. Some two years later the patient came to pneumonectomy for his tuberculosis, developed a postoperative bronchopleural fistula and empyema, and ultimately died. At autopsy no evidence of the active actinomycosis was demonstrated. A long to be remembered object lesson we learned from this case, and one not emphasized enough in texts and courses on physical diagnosis—that all severe pleuritic pain in the chest may not be pleurisy, pericarditis or coronary discomfort, but may be dorsal root nerve pain.

The other patient we encountered with fungous disease provided a fascinating example of important chest abnormalities occurring simultaneously. The patient was admitted because of bacteriologically proven far advanced, active tuberculosis. Because he was also found to have a paralyzed diaphragm and a rounded mass in one lung, we suspected clinically that he also had bronchogenic carcinoma though bronchoscopy, sputum cytology studies, and a scalene node biopsy did not verify this suspicion. His clinical toxicity and lack of pulmonary reserve precluded thoracotomy and the patient ultimately expired. Our diagnosis of tuberculosis and coexisting carcinoma was verified, but to our complete surprise he also had numerous abscesses in both lungs from which pure cultures of North American blastomycosis were obtained. The case illustrates the importance of obtaining more routine fungous and cytology studies of sputum in tuberculosis patients who are not responding well to the usual effective medicaments. In this connection, T. C. Black and H. M. Wilson reported a patient with active pulmonary tuberculosis and blastomycosis that was successfully treated with Stilbamidine in 1953. Feld and Cad-den also reported two cases of pulmonary tuberculosis with coexistent pulmonary blastomycosis in 1949. H. F. Stein reported fifteen cases of co-

existing pulmonary tuberculosis and coccidiomycosis.

A public health aspect worthy of some consideration was illustrated by another of our group of carcinoma patients: About two years before admission to the tuberculosis hospital he had a thoracotomy because of a mass in the chest, at which time an unresectable bronchogenic carcinoma was found. During the long downhill course following surgery the patient coughed and raised considerable sputum; after nearly two years, a sputum examination for tuberculosis was made because one of the patient's children was found to have an active primary tuberculosis, and the slides and cultures were grossly positive for tuberculosis. It goes without saying that this patient exposed many other people to the danger of tuberculosis, and in pondering over this case, we could not help but think that this sort of experience may be happening a lot more often than we like to think in hospitals, nursing homes, and domiciliary facilities throughout the country. Patients in these facilities constitute another of the remaining important reservoirs of tuberculosis in this country, in our opinion. Carcinoma patients are a debilitated group as a rule anyway, and more susceptible to infection; then again, an invading tumor process could very easily break into a quiescent focus of pre-existing tuberculosis and release active bacilli. Probably occasional cultures of sputum in patients dying with terminal cancers are indicated as a protective measure to nursing personnel and other attendants.

Most students of chest disease now feel that the incidence of bronchogenic cancer in the tuberculous population is no more nor less than that of the population at large. Most of us are seeing a

generally older age group in tuberculosis facilities now, and we can reasonably expect to be seeing more bronchogenic neoplasms occurring in them. The problems presented in this group of patients do not present simple solutions. A certain complacency is apt to develop when an etiologic agent such as a tubercle bacillus is isolated and the case "diagnosed." Unfortunately too often it is only when the subsequent clinical course of events or x-ray behaviour of lesions is not satisfactory that some of the other conditions are given serious thought, and as in the cases we have observed, it is often too late. The logical answer at present would seem to maintain an open mind and high index of suspicion about chest lesions of all kinds, and to perform more routine sputum cytology and bronchoscopic studies on patients over the age of thirty-five. In addition, more routine fungous sputum cultures as well as routine skin testing for fungi should be done on tuberculosis patients and others with undiagnosed chest disease. In patients whose clinical condition will permit, we also feel that where reasonable doubt exists, early thoracotomy should be entertained, because with the available armamentarium of drugs and antibiotics, such surgery to establish a definitive diagnosis does not carry a prohibitive risk.

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GRANULOMAS OF THE LUNG

(Continued from Page 1795)

Summary

The pulmonary granuloma presents a problem in diagnosis and treatment because of its similarity to many cancers of the lung. The etiology of the granuloma is most often a fungus and least often tuberculosis. Diagnostic criteria are presented and the problem discussed. The six cases presented illustrate the difficulty in diagnosis in differentiating between the less serious granuloma and the serious carcinoma.

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Chylothorax

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CHYLOTHORAX is by definition an effusion of chylous fluid in the free pleural space. It is generally considered a disease entity. However, Nix *et al*¹ prefer to have it merely a fascinating sequela of an internal lymph fistula of obstructive or traumatic origin. The condition is still a relatively rare one, but it may be more common than the literature on the subject would indicate. Certainly, its occurrence is becoming more frequent, to parallel the increasing number and scope of intrathoracic surgical procedures. It occurs when chyle or chylous fluid escapes from the thoracic duct or its tributaries and may be the result of trauma to the duct or obstruction of the duct or of the great veins into which it empties. Frequently it may present a problem of diagnosis as to the mode of origin as well as a problem of management.

According to Brescia,² Bartolet first described this entity in 1633, and Quincke reported the first authoritative case in 1875. In a review of the literature extending up to 1942, Jahsman³ was able to find 102 cases. To this figure he added another three cases of his own, bringing the total number to 105. Since that time many new cases have been added but unfortunately there is no accurate figure available. It is of interest that Seaman⁴ found no mention of chylothorax in either the Civil War or the World War, and that Berry⁵ discussed the only case reported as occurring in the American Army during World War II.

The Lymphatic System

Lymphatics arise independent of blood vessels from discrete mesenchymal spaces which become lined by endothelium. By progressive fusion and budding of such local anlagen, the lymph system grows to its final form. The lymphatic system consists of lymph ducts, glands, and fluid lymph. The lymph ducts drain the lymphatic glands. They extend to every portion of the body. The ducts in the lower abdomen and lower extremities unite to form the cisternal chyli. This lymph space is drained by the thoracic duct which, after receiving the tributaries from the left half of the thorax,

upper extremity, and head, empties into the left subclavian vein. The right lymphatic duct drains the right side of the head and thorax and the right upper extremity, and empties into the right subclavian vein. The embryonic thoracic ducts are bilateral and symmetric and have numerous cross anastomoses. The adult duct is produced by disappearance of varying portions of the embryonic ducts and growth and persistence of the remaining portions. Because of this complexity of its embryologic development, the anatomy of the adult thoracic duct is subject to considerable variation. It is not always the single, well-defined structure that is pictured in standard anatomic works. Thoracic ductography as done by Lowman, Stranahan, Celis and Garamella⁶ has well demonstrated many variants of the anatomy of this portion of the lymphatic system.

The thoracic duct arises in the abdomen from the cisterna chyli, which lies over the body of the second lumbar vertebra. From this origin it courses to the right and behind the aorta and enters the thorax through the aortic hiatus of the diaphragm. It ascends through the posterior mediastinal space close to the spine in a groove between the aorta and the azygos vein. In this area it is well concealed, but as it emerges from behind the aortic arch it becomes subpleural where it can be seen through the mediastinal pleural reflection. At this level, opposite the fifth thoracic vertebra, it inclines toward the left side and ascends behind the thoracic part of the left subclavian artery and between the left side of the esophagus and the left pleura into the neck. Here it forms an arch which rises about 3 or 4 cm. above the clavicle and crosses anterior to the subclavian artery. It finally terminates by opening into the angle of the junction of the left subclavian and internal jugular veins. The duct is 4 to 6 mm. wide and is equipped with several valves, having a pair at its termination arranged to prevent the reflux of venous blood. It is generally flexuous and constricted at intervals, presenting a varicose appearance. Lee⁷ in 1922, demonstrated that there are many small collateral

branches which are in conjunction with the main duct and that some of these communicate by small filaments with the lumbar, intercostal, and azygos veins. In the neck the main duct is joined by the left jugular and left subclavian trunks and the left bronchomediastinal trunk.

The thoracic duct and its tributaries serve as the channel through which chyle is carried from the digestive system to the venous circulation. Flow of lymph is dependent upon several factors. The rhythmic contractions of the smooth muscle fibers in the duct, the changes in the intrathoracic pressure with respiration, the accumulation of chyle in the cisterna chyli, movements of the extremities, and intestinal peristalsis all help to propel the chyle upward along the duct. Under normal conditions the intraductal pressure is said to be very small, but after ligation it can reach as high as 35 cm. of water. On the other hand, the pressure in the venous angle receiving the thoracic duct may be zero, or less than atmospheric pressure.⁸ This permits ready entrance of chyle into the venous circulation. The amount of chyle flowing through the duct varies between 60 and 190 cc. per hour,⁹ or approximately two liters a day. And through this vehicle is transported from sixty to seventy per cent of the fat from the lacteals of the intestinal villi into the venous system.

Chyle is essentially lymph containing from five to fifteen per cent of emulsified fat. The protein concentration of chyle may be increased to two or more per cent, dependent upon the food absorbed in the intestines, but still a little below that of the blood plasma, which averages around 6.18 per cent. Other constituents, such as the non-protein nitrogen, sugar, urea, amino acids, cholesterol and electrolytes, are about the same as blood serum. The lymphocyte and eosinophil counts in chyle are, however, considerably higher than in the circulating blood. Lymph also clots, but more slowly than serum, as the thromboplastin derived from blood platelets is poorly represented and there is a relative excess of antithrombin.

The chief characteristics of chyle are as follows. Because of its finely emulsified fat content, it has a white or "milk" appearance. On standing, it may form a cream layer on top, a milk layer in between and a cellular layer at the bottom. It is practically odorless and has a specific gravity of 1.010 to 1.021 and alkaline reaction. It contains lipid substances which are stained by Sudan III, a lipophilic dye. Smear shows varying numbers of white cells with

lymphocytes predominating. Culture usually results in no growth and if the fluid is alkalized and shaken with ether, it will clear.

Etiology of Chylothorax

The etiologic factors of chylothorax may be considered under two major classifications, the traumatic and the non-traumatic. In 1932, MacNab and Scarlet¹⁰ found one-third of the previously reported cases of chylothorax followed trauma. Recent years, however, the increasing number of intrathoracic surgical procedures has made the proportion conspicuously greater. Garamella⁶ collected 128 cases of traumatic chylothorax during the period from 1695 to 1956. To this may be added the case presented at the Upjohn TV Grand Rounds held on March 18, 1959.

The types of trauma responsible for the development of chylothorax have been sudden violent hyperextension of the spine, penetrating wounds such as were inflicted by bullet, steel fragment or knife, fractured ribs, clavicles and vertebrae, accidental lacerations occurring in the course of surgical procedures in the mediastinum as well as in the neck and abdomen adjacent to the upper and lower orifices of the mediastinum respectively, severe coughing spells, convulsions, blast injuries, and injuries to infants at the time of delivery or shortly thereafter. The most common type is the hyperextension injury from falls, bruises, et cetera, in which the thoracic duct is suddenly and acutely extended. Under such circumstances, a laceration may result to the rather fragile thoracic duct through the compression by the right crus of the diaphragm. Within recent years, however, the number of cases incident to post-operative injuries has conspicuously increased. There is every reason to anticipate that the number will continue to increase, in view of the ever-growing frequency of extra- and intrapleural operations. McCoy¹¹ and Gaspar¹² reported a case each of traumatic chylothorax as complication of aortography.

Chylothorax of nontraumatic origin occurs most frequently in association with metastatic malignant disease which gives rise to obstruction to the duct and/or its radicles by implants within the lumen or by pressure on the duct from adjacent nodes in the supraclavicular area. Invasion of the subclavian or innominate veins, or even the superior vena cava is fairly common. There are included abdominal carcinomas, especially those of the stomach, lymphosarcoma, and Hodgkin's disease.

Tuberculous lymph nodes in the mediastinum may either compress or ulcerate into the thoracic duct. Olsen and Wilson⁸ gave tuberculous paravertebral abscess as the apparent cause of the case they reported. Other miscellaneous causes listed by Yater¹² included lymphangiectasis, localized thrombosis of the subclavian vein in the region of its junction with the duct, filarial obstruction, and erosion by aneurysms. To these should be added the spontaneous group that occurs in children under one year of age and may be due to some congenital anomaly or atresia in the lymphatic system.⁵ Also, there have been cases reported in which no obvious etiologic factor could be demonstrated, the so-called idiopathic group classified by more recent writers.

Chylothorax may occur in either pleural space or sometimes is bilateral, and occasionally in association with chylopericardium or chylous ascites. Listerud *et al*¹⁴ reported a very unique case of "3-cavity" chylous effusion involving the two pleural and the abdominal cavities. Right chylothorax is much more common than left chylothorax, presumably due to the duct traversing most of the thorax on the right side of the vertebral column. For the same reason, injuries of the upper part of the thorax are likely to give rise to chylothorax on the left side while injuries in the lower two-thirds of the thorax may result in chylothorax on the right.

Symptoms and Signs of Chylothorax

Chylothorax usually follows a rather characteristic course. In most nontraumatic cases, it is only conjecture as to when the chylothorax first appears. The onset is most often insidious, and at times the chyle leakage may be very slow. On the other hand, the development of chylothorax due to trauma is usually a dramatic one. There is generally a latent interval between the trauma and the initial symptoms of chylothorax. This interval may range from a few hours to months or even years. Beatty¹⁵ reported a case which suggested a latent period of six and one-half years between injury and appearance of chylothorax. The delay is apparently due to retropleural accumulation of chyle, which has been described as "retropleural chyloma"¹⁶ and may simulate the appearance of a mediastinal mass in the roentgenogram. After a short delay, then, this extrapleural collection of chyle ruptures into the pleural space, secondary to impaired blood supply and local ischemic necrosis,

and chylothorax develops rather rapidly. At the onset, therefore, dyspnea and shock are the predominant symptoms. They are not unlike the pressure symptoms of a sudden massive hydrothorax, or especially hemothorax, producing mediastinal compression and shift. At times, they are apt to be severe, as the result of the sudden cardiorespiratory embarrassment produced by the fluid mass. Thoracentesis gives dramatic relief, but the fluid usually reaccumulates rapidly and necessitates frequent aspirations. Associated with the pressure symptoms is a rapid decline in body weight due to the continuous loss of chyle, resulting in severe depletion of large amounts of digested and absorbed fat, protein, water and electrolytes while the chylothorax is accumulating. In some cases, peripheral edema, wasting and exhaustion of the patient continue to progress, and the condition is fatal within a few weeks. In others, after the initial accumulation of fluid has occurred, a state of partial equilibrium is established. The mediastinum becomes stabilized so that pressure symptoms are no longer severe. At the same time, the pleural accumulation under pressure may serve to reduce the leakage. Hence the speed of weight loss is reduced and although the individual does not regain what he has lost, no further decline occurs. These patients may then live for a good many years carrying a large chylothorax but maintaining fairly good health. The prognosis in patients with nontraumatic chylothorax has been generally very poor, due to the nature of the underlying disease. With the traumatic cases, however, it appears to have shown more favorably recently, thanks to the recent improved surgical and laboratory techniques. Lampson's success in curing a patient with traumatic chylothorax in 1946, by intrathoracic ligation of the thoracic duct has practically revolutionized the treatment of traumatic chylothorax.

Diagnosis of Chylothorax

The diagnosis of chylous effusion is simple; it is established by the character of the pleural fluid. The latent period before onset of symptoms is suggestive. Physical and roentgenologic signs are merely those of pleural effusion, irrespective of character. The relative radiolucency of fat, however, might possibly suggest chyle as the type of fluid present. An initial concomitant hemothorax, following injuries of the thoracic duct, may at first cause considerable confusion, but after repeated

tappings, the fluid will clear and its true character can be readily recognized.

Treatment of Chylothorax

Much has been written on the management of chylothorax. Seaman⁴ has tabulated the most complete list of methods used from 1921 through 1952. It is beyond the scope of this paper to give more than an enumeration of some of the more important procedures used. The general plan has been directed toward the relief of mechanical compression, the maintenance of nutrition, and measures to halt the loss of chylous fluid. The consensus of opinion of most authors is that the chest should be aspirated only when absolutely necessary for the relief of dyspnea. The accumulated chyle in the pleural cavity, when not sufficient to cause pressure symptoms, may favor the closing of the fistula, whereas removal of fluid merely permits further reaccumulation and thus increases the patient's loss of food. The limitation of fluid intake and the avoidance of a high fat diet have been used in an attempt to slow the production and flow of chyle, but apparently without much benefit. On the other hand, as many as one-half of the recorded cases of chylothorax have recovered after simple aspiration of the chyle, with or without replacement of the chyle.¹⁶

When there is a continued loss of large quantities of chyle, the maintenance of nutrition is often a very difficult problem to solve. The depletion of fat, protein, water and electrolytes must be interdicted as rapidly as possible, through adequate replacement of these nutritional elements. A high protein diet is helpful. So is the transfusion of blood and blood substitutes, including the most important electrolytes. Berry⁵ advocated daily injections of blood plasma, in amounts equivalent to the loss of chyle, while Meade and his co-workers¹⁶ discouraged its use because it produced a fatal hepatitis in one of their cases. Replacement of the aspirated chyle by means of intravenous administration was first attempted by Oeken⁸ as early as 1908, but his patient did not recover. Bauersfeld,¹⁷ in 1937, used the method successfully, without knowledge of it having been used before. Several other instances¹⁸⁻²³ have been recorded since. However, because of the sudden death following this procedure, apparently of an anaphylactic nature, that occurred in two cases,^{20,21} many more recent authors have discouraged its use until the causes of the anaphylactic reactions have been established

and under control. Theoretically, the procedure is not any different from an autogenous blood transfusion, as chyle normally flows into the blood stream. The autogenous nature of the aspirated fluid should offer negligible causes for anaphylactic reactions unless the fluid has been altered physically and/or chemically.

The definitive measure to halt the loss of chyle is obviously arresting of the chyle at its source, either by ligation or by pressure. Unfortunately, this is not always successful. Even when exploration of the mediastinum is permissible, the problem of finding the chyle leak may be difficult. Furthermore, the necessarily extensive mediastinal dissection may even cause further complications, such as converting the chylothorax into a bilateral process, injuring other vital organs, etc. It would therefore appear that more conservative means should be tried before attempting any drastic procedures. Frequent thoracenteses have been almost universally employed. They serve to relieve any cardio-respiratory disturbances and in some cases, such as in one of the two cases herein reported, to obliterate the chylothorax. However, the procedure should not be continued unless there is evidence of decrease in the amount of chyle leakage. The hope of spontaneous closure of the chyle fistula is not justified when the fluid tends to reaccumulate rapidly. Closed drainage, with or without suction, has been successful in several instances.^{18,24} Pneumothorax for the purpose of discouraging the flow of chyle has been done without great success. The injection of sterile broth¹⁹ or other fibrinogenic agents, gomenol²⁵ for example, into the chest cavity may be of value in sealing off the leaking duct. Irrigations with azochloramid²⁶ to stimulate fibrinous reaction have been resorted to with some benefit. Phrenicotomy has been employed twice^{19,28} without any noticeable effect on the course of the disease, but the third case,²⁷ however, was cured as the result. In this case, the elevation of the diaphragm has presumably closed the perforation of the thoracic duct just above the diaphragm. Pneumoperitoneum²⁸ was tried only once with doubtful result. Brown²⁹ successfully drained a "retropleuralchyloma" with the thought that a free external flow of inspissated chyle would encourage healing of the rupture in the duct. In cases of chylothorax due to lymphoblastoma, or secondary to malignant disease in general, deep roentgen therapy should be tried with the expectation that in some instance the obstruction of the thoracic duct will be relieved,

at least temporarily. Usually, however, in such cases not much general benefit from the treatment can be expected, as they are, for the most part, suffering from far-advanced tumors. All the afore-said methods have been instituted in the hope that spontaneous closure of the mediastinal sinus would occur. When these conservative measures fail, then one is justified in risking a direct attack through the chest at or below the site of the rupture with the intent to ligate the duct low in the mediastinum. This has been done successfully, with very little fatality, since 1946, when Lampson accomplished the first successful intrathoracic ligation of a human thoracic duct.³⁰ And yet only the year before, 1945, Florer and Ochsner²³ expressed the consensus of existing surgical opinion that primary surgical attack on the leaking intrathoracic portion of a duct had been uniformly fatal.

Report of Cases

Case 1.—A. J. A. (Case No. 5321), a forty-one-year-old white man, was admitted to the American Legion Hospital on April 18, 1951, for diagnosis and treatment. He had developed a stricture of the lower portion of the esophagus in June of 1948, following ingestion of one to two ounces of K-78, a compound containing 40 per cent of potassium hydroxide, in a suicidal attempt. The immediate result had been a very severe burn of the mouth, tongue, oropharynx, hypopharynx and the esophagus. At that time, a gastrostomy was resorted to; it was closed in August, 1948. Two months later, he developed a pyloric stenosis, which required a posterior gastroenterostomy. Meanwhile, his symptoms of esophageal stricture recurred, for which gastrostomy was again performed in April, 1949. The gastrostomy was finally closed in October, 1950, after a lapse of eighteen months. During the next few months, the patient had to dilate his esophagus by himself from above on numerous occasions. Around January, 1951, he developed a productive cough, sometimes bringing up large quantities of "milk-like" sputum, pain in left side of chest with inability to sleep on that side, anorexia, insomnia, occasional chilly sensations, occasional "white" urine, loss of over twenty-five pounds and progressive loss of strength. Chest x-rays on March 12, 1951, revealed a pleural effusion on the left side; one taken on February 26, 1951, had been essentially negative. Immediate hospitalization was therefore recommended, but as there was no bed available at the time, patient was not admitted until April 18, 1951.

At the time of admission, the patient also stated that he could not recall having had any tuberculosis contacts, although he himself had had tuberculosis of the left ankle in 1947, which healed satisfactorily after a few months with immobilization. The past history also revealed the fact that the patient was once a lightweight boxer some twenty years ago, when he received body injuries on several occasions, but without knowledge of

any fractured ribs. Further questioning, however, elicited the information that just a few days prior to the onset of his chest pain he had done a number of back flips, to which he had been unaccustomed for some time.

Physical examination revealed a well-developed, although of small build, white man with a rather high-pitched voice. Temperature, pulse and respiration rates appeared normal. The blood pressure was 138/90. Examination of the lungs revealed decreased fremitus, flatness, absence of breath sounds over the left base antero-laterally and posteriorly, with medium moist rales immediately above the area. The heart appeared normal and not displaced. The abdomen was essentially negative other than for a recent and well-healed post-operative epigastric scar. The right foot was "clawed," the result of tuberculosis in 1947.

Laboratory studies disclosed a total erythrocyte count of 3,900,000 per cu. mm., and 14.1 Gm. of hemoglobin per 100 cc. The total leukocyte count was 5,000 with a normal differential. The erythrocyte sedimentation rate was 2 mm. per minute (Wintrobe and Landsberg). The urine was amber in color and had a specific gravity of 1.025 and a reaction of pH.6; was negative for albumin and sugar but microscopically revealed a small number of erythrocytes, leukocytes and fat globules. A serologic test for syphilis was negative. Two sputum specimens were found negative for acid-fast bacilli on concentrated smears and cultures. Skin reaction to tuberculin was negative in 1:100 dilution of Old Tuberculin.

Roentgenographic examination of the chest (Fig. 1) revealed evidence of a healed fracture of the seventh, eighth and ninth right anterior ribs. The right diaphragmatic cupola appeared tented while the left costophrenic angle was completely obliterated with a dense shading with decreasing density upward to the fourth anterior rib. No parenchymal lesions were noted. Fluoroscopy demonstrated the fluid to be in the posterior sulcus, and in the ingestion of a thick mixture of barium the esophagus was well outlined and the barium passed quite freely into the stomach. The lower half of the esophagus, however, appeared somewhat narrower than usual, especially at the cardia. No extravasation of the contrast material from the esophagus was visualized.

On April 19, 1951, the day following admission, a left thoracentesis was performed. It yielded 1000 cc. of creamy fluid, which was confirmed as chyle by the laboratory report with the following characteristics: creamy, opaque, alkaline, clearing on addition of ether and microscopically showing numerous fat globules and histiocytes and few pus cells. Papanicolaou stained smears and paraffin sections did not show anything resembling malignant cells. Culture of specimen was reported without growth after two months.

Further thoracenteses were done daily during the next four days, each emptying the cavity and yielding as much as 1500 cc. of creamy fluid. The diagnosis of left chylothorax was thus firmly established and in view of the rapid reaccumulation of the fluid and the progressive deterioration of the patient's condition, the hope of spontaneous closure of the chyle fistula by further thoracenteses was not justified. More radical treatment

was therefore deemed necessary, and the patient was transferred back to the University Hospital at Ann Arbor on April 27, 1951, where he had had his previous abdominal surgery and esophageal dilatations.

end of the tube and without any evidence of communication with the lung parenchyma. On the other hand, postural drainage was necessary to relieve dyspnea due to the constant production of the above-mentioned curd-

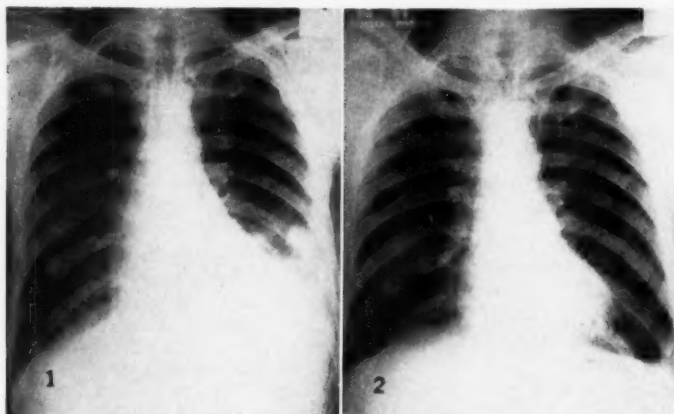


Fig. 1 (Case 1). Chest roentgenogram taken on admission (April 19, 1951) showing fluid at the left base.

Fig. 2 (Case 1). Chest roentgenogram taken on January 23, 1952, approximately six months after the ligation of the thoracic duct and the lung fully re-expanded.

While at the University Hospital three thoracenteses were done which yielded 1300 cc. of chyle on May 3, 750 cc. on May 4, and 1300 cc. on May 10, 1951. A left thoracotomy was performed on May 15, with insertion of drainage tube into the pleural cavity. Continuous drainage by suction was maintained until July 6, 1951. On June 15, 1951, a bronchoscope was inserted through the sinus in the left mid-axillary line and the fistula in the thoracic duct was cauterized with 30 per cent silver nitrate. This procedure was only partially successful in reducing the amount of chyle drainage. Cauterization was therefore repeated on July 6, following which time the patient had only a very minor amount of serous drainage from the sinus. He was subsequently discharged on July 11, 1951, with instruction to return to the Thoracic Surgery Clinic weekly for shortening of the drainage tube.

On July 28, 1951, the patient began to cough and raise a fluid-type of sputum containing stringy-white curds similar to the drainage from the sinus tube. This seemed to be present almost constantly, often being raised by simply clearing his throat. Furthermore, he was unable to lie horizontally as he would become orthopneic and begin to cough up copious amounts of this sputum. He was therefore readmitted to the University Hospital on July 31. At that time, he was found well nourished but with a loud rasping type of expiration and tubular inspiratory sounds. The drainage tube was still in his left lateral chest wall. Lipiodol injection through it demonstrated only a small pocket at the distal

like sputum. Finally, on August 8, a right thoracotomy was done and the thoracic duct ligated immediately above the diaphragm, with the hope of treating the bronchochylous fistula effectively. The patient tolerated the procedure well and for several days postoperatively continued to cough up progressively less chyle-filled sputum. At the time of discharge on August 26, only an occasional small speck in the sputum was seen. In addition, fluoroscopy of the chest at that time disclosed no evidence of fluid in the left base, only some pleural thickening. The patient returned to the Clinic on three different occasions, the last being on September 29, 1951. His sinus tract appeared to have completely closed and on examination his lungs were found clear and there was only a moderate amount of distortion of the right leaf of the diaphragm.

The patient was last seen and his chest x-rayed at the American Legion Hospital on February 23, 1952 (Fig. 2), when he applied for a job as kitchen help. He appeared well and claimed he had been completely free from his chylous symptoms very shortly after his discharge from the University Hospital in August, 1951. The chest film demonstrated only moderate pleural thickening of the left base. However, he did not stay long on his job; he was discharged after only two weeks of employment for being intoxicated. Efforts to locate him since have failed.

Case 2.—T. A. J. (Case No. 5504), a thirty-seven-year-old colored man, was admitted to the American

CHYLOTHORAX—WU

Legion Hospital on October 5, 1951, with the diagnosis of left pleurisy with effusion. He had been asymptomatic until September 11, 1951, when he suddenly developed shortness of breath on climbing upstairs and night-

extending into the parenchyma in the first anterior interspace. A sputum concentrate was positive for tubercle bacilli on smear. Blood Kahn was negative. The sedimentation rate was 3.3 mm. per minute (Wintrobe

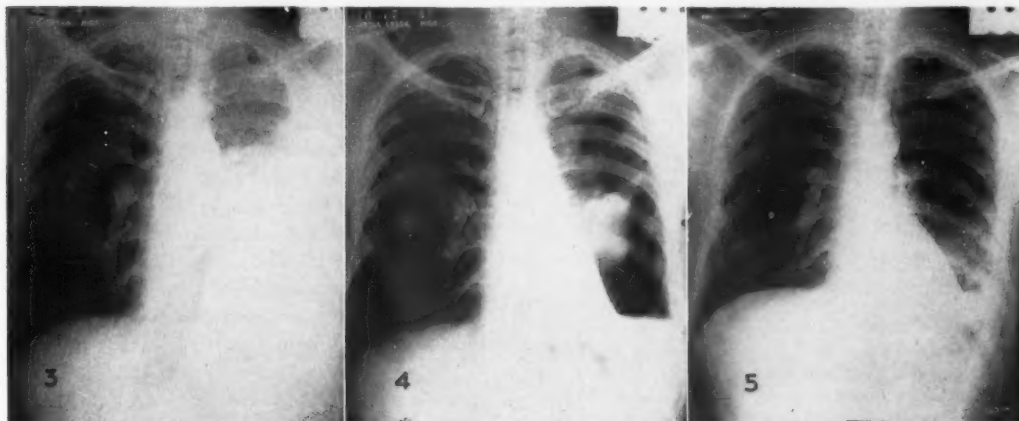


Fig. 3 (Case 2). Chest roentgenogram taken on admission (October 8, 1951) showing large collection of fluid in the left hemithorax.

Fig. 4 (Case 2). Chest roentgenogram taken on October 13, 1951, after almost complete replacement of the chyle by air, shows atelectasis of the lower lobe and possibly the lower portion of the upper lobe of the left lung but no evidence of other abnormality other than the thickened pleura.

Fig. 5 (Case 2). Chest roentgenogram taken on May 3, 1952, some two and one-half months after repeated aspirations, shows a relatively small obliteration of the left costophrenic angle. The pulmonary atelectasis has apparently re-aerated, but the heart is still somewhat displaced to the left.

sweats that night. The following morning he went to the Veterans Administration Office, Detroit, for help. Chest x-rays then disclosed an "abnormal condition" on the left hemithorax. He was therefore referred to the Herman Kiefer Hospital in Detroit on September 19. There he had another chest film taken and the diagnosis of left pleurisy with effusion was made. Finally, he was admitted to the American Legion Hospital for diagnosis and treatment.

On admission, the patient stated that except for the occasional sharp pain over the left parasternal region he had been quite comfortable since the onset of his illness. Physical examination revealed a well-developed and well-nourished colored male of thirty-seven. He appeared very well and exceedingly co-operative. His weight was 155 pounds. His temperature, pulse and respiration rates were normal. Blood pressure was 125/90. The chest showed an appreciable bulging of the left base, where flatness and absence of breath sounds were noted. The cardiac dullness appeared only very slightly displaced to the right. X-ray inspection revealed a definite black-out of the lower two-thirds of the left lung (Fig. 3). The right lung showed only a few small nodose lesions along the upper bronchus,

and Landsberg). Blood counts were within normal limits. Urinalysis was normal, except for the presence of few white blood cells.

The first thoracentesis was done on October 9, 1951, four days after admission. One thousand cc. of a greenish milk-like fluid was removed. More could have been obtained but for the onset of syncope-like discomforts. Immediate fluoroscopy revealed the fluid shadow only slightly decreased but the heart now somewhat displaced to the left. The fluid specimen was found to contain a large amount of fat by the Sudan III test, a few erythrocytes, lymphocytes and degenerated polynuclears on Wright-stained smears. Malignant cells were not found. The pathologist diagnosed the fluid as that of a "chylous hydrothorax."

On October 13, 1951, the second aspiration was done. It yielded 850 cc. of the same greenish milk-like fluid. An equal amount of air was introduced, with the purpose to determine the nature of the underlying portion of the left lung. There appeared to be an atelectatic collapse of the lower lobe and possibly the lower portion of the upper lobe, with the pleura considerably thickened (Fig. 4). The pneumothorax thus created disappeared completely during the next few aspirations.

Up to early March, 1952, twenty-two repeated aspirations were done. The last two resulted in dry taps. The fluid became progressively less in quantity and loculated in pockets and finally serous in character. The total quantity removed was only 4,952 cc. The serial roentgenograms showed gradual and progressive clearing of the atelectatic portion of the lung and the fluid density, leaving only a relatively small obliteration of the left costophrenic angle, as shown in the film taken on May 3, 1952 (Fig. 5). A spinal film taken on the same day showed no evidence of vertebral pathology.

A bronchoscopic examination was made on December 5, 1951. No evidence of endobronchial disease was observed. In addition to bed rest, Streptomycin 1 Gm. three times weekly and para-Aminosalicylic Acid 4 Gm. three times daily were given from the time of admission for a total dosage of 40 Gms. and 1,080 Gms. respectively. During the first month after admission, the patient had a low-grade temperature from 99 to 100 F. and a weight loss from 155 to 146 pounds. Thereafter, he improved steadily, with his weight increased to 170 pounds. His sputum was positive for tubercle bacilli on concentrated smears on two occasions only, in October, 1951, and January, 1952. Several subsequent follow-up monthly specimens all proved negative. The patient was therefore placed on graduated exercise as of May 1, 1952, and finally discharged in September. He has not been seen since for follow-up.

Comment

It is interesting to note that the two cases of chylothorax herein reported have been the only two admitted, and within six months apart, to the American Legion Hospital during its existence of over thirty years for the exclusive treatment of pulmonary tuberculosis. It is certainly equally unique to the writer as they have been the only two cases he has been given the opportunity to diagnose and treat in his thirty years' experience in the field of phthisiology.

These two cases of chylothorax represented characteristics of unusual interest from the standpoint of history, of mode of origin, and of methods of management. However, their exact etiology has not been confirmed. The first case apparently belonged to the traumatic group, being incident to an esophageal stricture following a severe caustic burn. The repeated dilatations of the esophagus could have traumatized the delicate thoracic duct sufficiently for it to leak, especially if there had been tissue fixation due to the burn. Similarly, the back flips which the patient did a few days prior to the onset of his chest pain could have caused sufficient hyperextension of the spine and subsequent rupture of the thoracic duct. Whether the several abdominal surgical procedures

had been factors etiologically, it is only a conjecture. The patient showed evidence of bronchochylos fistula and left pleurisy from the onset of his symptoms, some two months before his admission to the hospital. Although his loss of over twenty-five pounds and loss of strength had indicated considerable loss of chyle from the thoracic duct through the bronchochylos and pleural fistulas and apparently also some through the urine, he did not suffer from extreme cardio-respiratory distress or exhaustion. The pleural cycle, however, did reaccumulate rapidly after each aspiration. Thoracotomy and closed drainage with suction together with cauterization of the fistula in the thoracic duct finally controlled the flow of chyle in the pleural cavity. The recurrence of the troublesome bronchochylos fistula, however, required ligation of the thoracic duct immediately above the diaphragm in the right thorax.

The second case appeared of a nontraumatic type. It gave a rather sudden onset, but also without extreme cardio-respiratory distress. The presence of a positive sputum for tuberculosis and an atelectasis of the lower mid-portion of the left lung strongly suggested tuberculosis as the etiological agent. Tuberculosis mediastinal lymph nodes had probably ulcerated into the thoracic duct directly, or the tuberculous inflammatory process had fixed the duct to the underlying vertebrae and the duct ruptured due to sudden hyperextension. The latter appears very likely, as substantiated by the sudden onset. Possibly, also, any retraction caused by healing tuberculous lesions, if any present, of the lung could be responsible for the sudden rupture of the duct and its radicals. The pulmonary atelectasis could be the result of the chylothorax and/or bronchial stenosis from endobronchial tuberculosis or bronchial tuberculous glands through pressure or ulceration. In the management of this case, it was not necessary to resort to surgery other than repeated aspirations of the fluid. The chylous fluid gradually decreased in amount with each successive tapping. There were altogether twenty-two aspirations required; they yielded a total of only 4,952 cc. of chylous fluid. Other therapy consisted of sanatorium care and chemotherapy including Streptomycin and para-Aminosalicylic Acid for the underlying tuberculosis. The writer believes that this was possibly the first case of chylothorax incident to tuberculosis reported in which chemotherapy with Streptomycin and para-Aminosalicylic acid was used. What part this relatively new therapy has

played in the obliteration of the chylothorax is difficult to evaluate.

Summary

Chylothorax as a disease entity has been briefly reviewed, together with a report of two cases, one incident to an esophageal stricture and the other to tuberculosis of mediastinal lymph nodes. Both were successfully controlled, the former by cauterization of the fistula in the thoracic duct and ligation of the thoracic duct immediately above the diaphragm and the latter by the conservative means of repeated aspirations and chemotherapy including Streptomycin and para-Aminosalicylic Acid.

Acknowledgment

Acknowledgment and appreciation are extended to the University Hospital Thoracic Surgical Service, Ann Arbor, for providing the necessary surgical notes on Case 1.

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DIET IN ARTHRITIS

A special dietary regimen which restricts water intake and administers cod liver oil on a fasting stomach produced major clinical and hematological improvement in arthritis and rheumatism at the Brush Medical Center, in Cambridge, Mass. Restriction of all water intake to a single portion taken one hour before breakfast is an integral part of the treatment.

In a series of ninety-eight patients who continued the regimen for six months, ninety-two (93 per cent) obtained marked relief and eighty-nine (90 per cent) showed favorable changes in blood chemistry. The blood sedimentation rates dropped consistently from averages of twenty to thirty (Wintrobe) to normals of zero to twelve within eight to eighteen weeks. These findings

provide an objective confirmation of the clinically observed reduction of the inflammatory process.

Intravascular agglutination with blood sludging is consistently found in arthritis. A comparison of the normal and arthritic patterns in the present study indicated that sludged blood resulting from positive intravascular agglutination may be an etiological factor. Cod liver oil taken on a fasting stomach was found to reduce blood sludging and also helped relieve the symptoms of arthritis.

The blood chemical changes and clinical results suggest that adherence to the prescribed regimen on a long-term basis may produce sustained improvement in arthritis.—BRUSCH, C. A., and JOHNSON, E. T.: *New dietary regimen for arthritis. J. Nat. M.A.*, 51:266 (July) 1959.

Histoplasmosis in Michigan

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HISTOPLASMOSIS, an infectious disease due to the fungus, *Histoplasma capsulatum*, is common in the state of Michigan. This infection is endemic, particularly in midwestern United States, and since

years.¹ The report of Parsons and Zarafonitis,¹⁴ in 1945, added seven fatal cases from the University of Michigan Hospital experience to the seventy-one then described cases. A number of subsequent

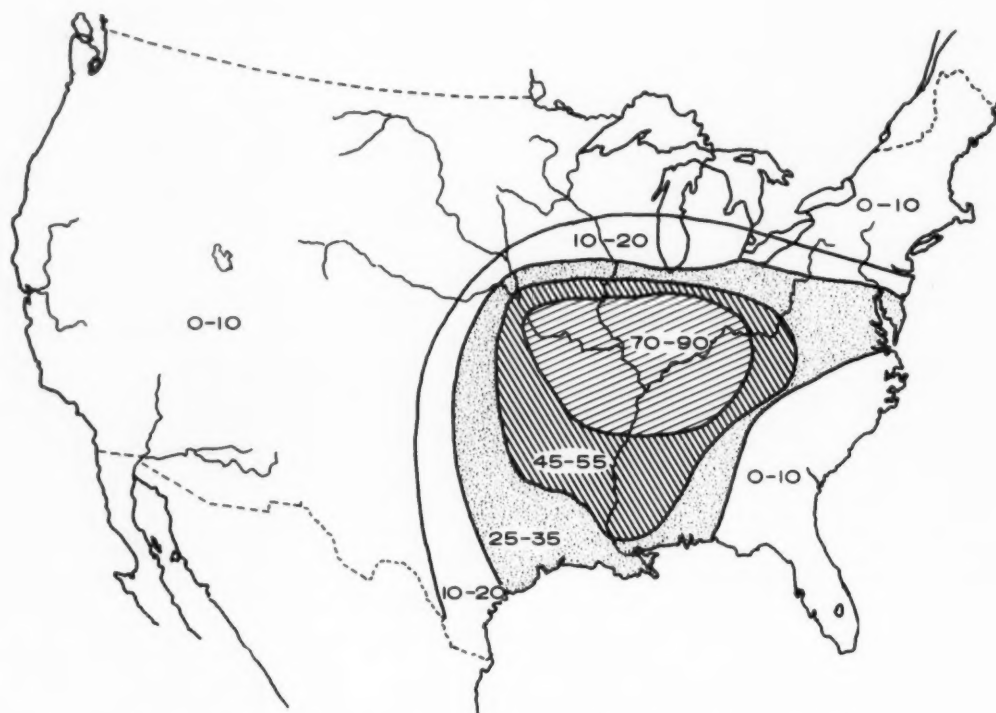


Fig. 1. Prevalence of histoplasmin sensitivity in the United States (after Furcolow⁷).

its description by Darling⁴ in 1906, a tremendous number of epidemiological, clinical, laboratory and pathological data concerning this disease have been accumulated. Though many of these data have been gathered in the past ten years, histoplasmosis has been recognized in Michigan for some twenty

papers have discussed the problem of this disease in Michigan.^{9,16,20}

Prevalence

The endemic areas of human infection with histoplasmosis, as disclosed by histoplasmin skin testing, have been delineated by Furcolow⁷ and Manos, *et al.*¹³ Figure 1 indicates the distribution of such

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histoplasmin sensitivity within the United States. Figure 2 has been adapted from Manos, *et al*¹³ to illustrate the incidence of this infection among young adults according to county of residence.

large segments of the population of Michigan, though reports have appeared^{1,3,8,12,17,20} indicating that ten to twenty per cent of the adult population was infected. Student nurses, when life-long resi-

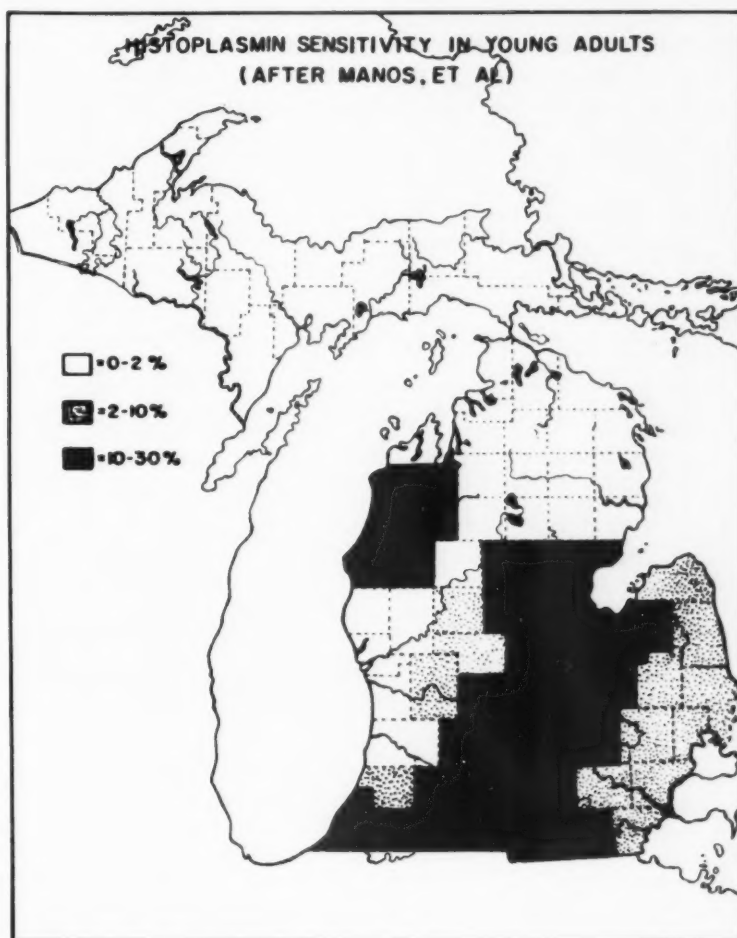


Fig. 2. Histoplasmin sensitivity in young adults according to county of residence (adapted from Manos, *et al.*, 1956).

These studies have demonstrated that numerous life-long residents of Michigan have been infected with histoplasmosis.

A survey of the adult patients on the general medical wards of University Hospital disclosed that twenty-two per cent of these residents of lower Michigan reacted to histoplasmin (Table I). Patients evaluated in the medical chest clinic of this hospital reacted to histoplasmin in 37.3 per cent of instances. No adequate data are available for

dents of the state, have been reactors to histoplasmin in 6.6 per cent of instances on matriculation at the University of Michigan School of Nursing.

Certain highly endemic areas of infection have been discovered by the broader use of histoplasmin testing in the school children of Washtenaw County (Fig. 3). Of particular interest are the children of the Milan, Michigan, schools who react in 61.5 per cent of instances; about thirty per cent being positive in the kindergarten groups.⁶

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These high prevalence rates are not observed among children of comparable age groups attending schools within a few miles of the city of Milan. The exact significance of this remains to be clarified.

material, as avian guano), humidity and temperature. The spores gain entrance into the human host usually by the respiratory tract, but may infect via the gastro-intestinal route or by direct invasion of open wounds. Within the animal host

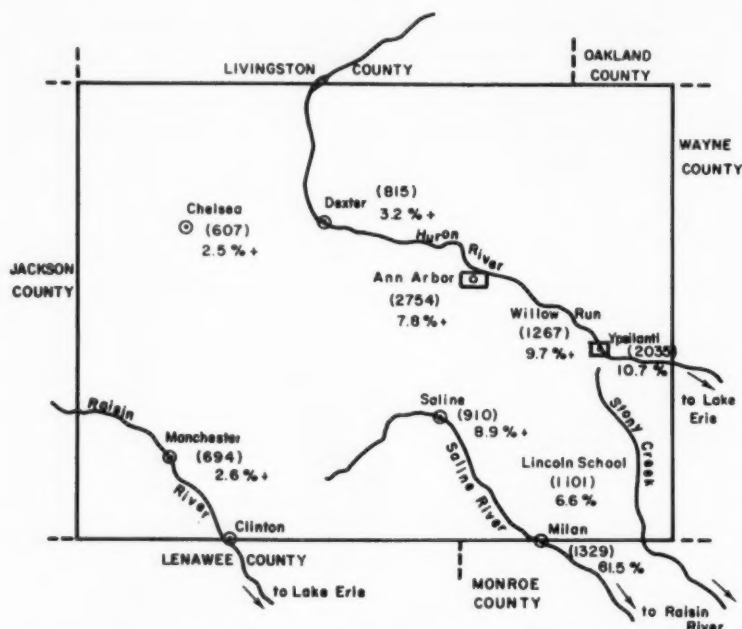


Fig. 3. Incidence of histoplasmin sensitivity among the school children of Washtenaw County, Michigan. (Data kindly furnished by Dr. Otto K. Engelke, Director, Washtenaw County Health Department).

TABLE 1. TUBERCULIN AND HISTOPLASMIN SKIN TESTING (University of Michigan Medical Center)

| Adult Patients | Antigen | | % | % Positive Histoplasmin |
|-----------------------|-------------|----------------|------|-------------------------|
| | Tuberculin* | Histoplasmin** | | |
| General medical wards | + | - | 25.0 | 22.0 |
| | + | + | 8.0 | |
| | - | + | 14.0 | |
| Medical chest clinic | - | - | 52.0 | 37.3 |
| | + | - | 32.1 | |
| | + | + | 17.3 | |
| | - | + | 20.0 | |
| | - | - | 30.4 | |

*Tuberculin (Old Tuberculin; 5 Tuberculin Units); Michigan Department of Health Laboratories.

**Histoplasmin (H-42; 1:100); Kindly supplied by the United States Public Health Service.

Pathogenesis

Histoplasma capsulatum, a member of the fungi imperfecti, is a biphasic organism. The mycelial phase, producing the infectious spores (chlamydo-spores), grows in nature under certain ideal conditions of soil type (often enriched by organic

material, as avian guano), humidity and temperature. The spores gain entrance into the human host usually by the respiratory tract, but may infect via the gastro-intestinal route or by direct invasion of open wounds. Within the animal host

the yeast phase of this organism is pathogenic, producing disease with a broad spectrum of symptomatology, clinical and pathological findings. Dispersed by winds the diffuse fallout of spores may account for a significant number of relatively minor infections of histoplasmosis, but most clinically important infections appear related to the inhalation of a moderate to a large number of spores from "point sources." Ideal circumstances of temperature, humidity and soil for the rapid growth of the mycelial phase, with production of tremendous numbers of spores, exist during the summer months in "point sources," such as abandoned chicken coops, old farm buildings, silos, steeples, caves, *et cetera*. A number of such foci have been identified in Michigan (Fig. 4) with isolation of the fungus from the site in a few instances.

The extent of pulmonary disease and often the severity of symptoms appear directly related to the

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proximity of the human host to such point sources, and thus to the number of spores inhaled. The acquisition of histoplasmosis is not by chance, in that the infected individual must, in general, visit a point source. The prevalence of infection, thus,

monary histoplasmosis can be compared favorably with tuberculosis, and this latter disease is most important in differential diagnosis.

No widely accepted classification of the spectrum of histoplasmosis has been made, but division

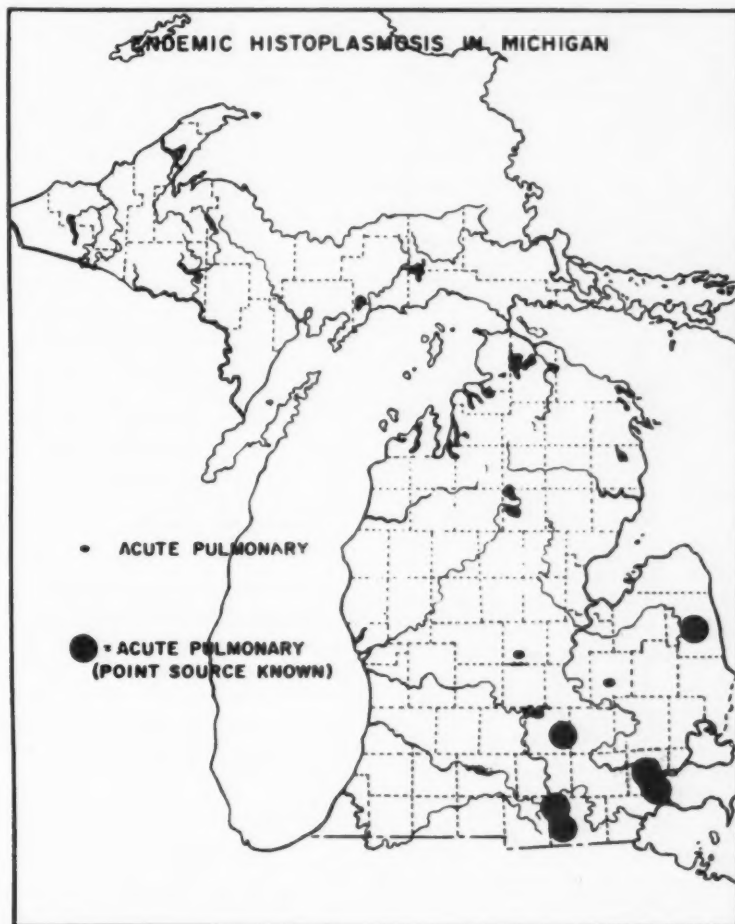


Fig. 4. Residence of patients with acute pulmonary histoplasmosis and indication of known "point sources."

is expected to be obviously greater in rural residents or those frequenting rural areas. Exceptions, as the city of Milan and several reports of urban foci^{2,10} are of great interest.

Clinical Manifestations

The clinical course, results of laboratory studies and radiological findings in patients with pul-

monary histoplasmosis can be compared favorably with tuberculosis, and this latter disease is most important in differential diagnosis. No widely accepted classification of the spectrum of histoplasmosis has been made, but division into acute (epidemic) pulmonary, benign asymptomatic pulmonary, chronic (progressive) cavitary pulmonary and disseminated histoplasmosis, is feasible. As with tuberculosis, most any combination of symptoms, and clinical, laboratory and radiological findings may be observed. Histoplasmosis is definitely a more benign disease than tuberculosis, however, and few patients experience protracted illness, have extensive cavitary pulmonary

disease, or manifest dissemination of an acute and progressive type.

Differential diagnosis of the acute pulmonary infections may be difficult, and the residuals of many

TABLE II. HISTOPLASMOSIS DEATHS
IN MICHIGAN*
(1950-1957)

| Year | Number | Male | Female |
|-------|--------|------|--------|
| 1950 | 2 | 1 | 1 |
| 1951 | 0 | 0 | 0 |
| 1952 | 1 | 1 | 0 |
| 1953 | 2 | 2 | 0 |
| 1954 | 1 | 1 | 0 |
| 1955 | 1 | 1 | 0 |
| 1956 | 0 | 0 | 0 |
| 1957 | 4 | 3 | 1 |
| Total | 11 | 9 | 2 |

*From: "Michigan Health Statistics," Division of Disease Control, Records and Statistics, Michigan Department of Health, Lansing, Michigan.

asymptomatic infections disclosed on x-ray examinations of the chest pose special problems in differentiation from tuberculosis, pulmonary neoplasm or other pulmonary manifestations of disease. The circumscribed nodular residual in lung is of great importance, especially when not containing demonstrable calcium, because of the inability to differentiate many of these from early pulmonary neoplasm.

Subacute and chronic disseminations may lead to vague symptoms of general malaise and easy fatigability (the "all-overs") and not infrequently are associated with recurrent "fever of unexplained origin." Differential diagnosis from tuberculosis, lymphoma, and collagen disease is often most difficult, and these diseases may be complicated by co-existing histoplasmosis.

Acute progressive dissemination, though rare even in infants and the aged (Table II), simulates miliary tuberculosis and death may be characterized by adrenal cortical insufficiency.

Diagnosis

Most infections with *H. capsulatum* are without symptoms, or at most, result in nonspecific complaints of a "cold" or "influenza-like" illness. A valid history of such an illness may be difficult or impossible to obtain.

With infection there is resultant tissue hypersensitivity to histoplasmin (antigen from the mycelial phase). This can be elicited by skin testing, performed by the intradermal injection of 0.1 ml. of histoplasmin, with interpretation of the test

at forty-eight hours, precisely as is done with a tuberculin test employing the Mantoux technique. Occult or asymptomatic infections can be detected by this method. Tuberculosis is a not infrequent concomitant of histoplasmosis, and if a patient is both histoplasmin and tuberculin positive, there is no way to determine which components of radiologically demonstrable disease are a result of each of these granulomas.

Acute pulmonary (epidemic) histoplasmosis often presents as an influenza-like illness with respiratory symptoms of cough and even sputum production. Fever is frequent, but the white blood cell count may be normal. Radiologically the pulmonary lesions often are bilateral, diffuse patchy infiltrates consistent with the findings in acute atypical virus pneumonia. The diagnosis of histoplasmosis should be suspected in such patients, particularly during the summer months. The histoplasmin skin test may be positive and the history of a visit, within the previous one to two weeks, to a possible point source of the fungus may be obtained on careful questioning. Proof of the disease can be made only by the recovery of *H. capsulatum* from the patient (sputum, blood, bone marrow aspirate, lymph nodes from scalene fat pad, *et cetera*), though serologic confirmation is possible by demonstration of elevated titres in the complement fixation studies on serum, especially on serial specimens. Recovery from this illness is usually spontaneous, and though the "characteristic" multiple bilateral calcifications may appear in areas of caseation necrosis over the next several years, many patients ultimately have entirely normal chest x-rays.

Benign pulmonary histoplasmosis has a multiplicity of radiological manifestations.¹⁸ The usual is a localized area of parenchymal infiltrate, often associated with ipsilateral hilar or paratracheal lymphadenopathy. Such a minimal lesion or primary complex is indistinguishable from pulmonary tuberculosis, though one hardly expects frequent evidence of the hilar or paratracheal component of the primary complex in adults with first infection tuberculosis. Diagnosis rarely is confirmed mycologically, but serologic evidence of active histoplasmosis is frequent. The parenchymal lesions usually resorb slowly, and may later be observed to have deposits of calcium within them. The hilar or paratracheal nodes regress more slowly, in general, and numerous patients are observed with unilateral or bilateral hilar and/or paratracheal

lymphadenopathy as a result of histoplasmosis. Later the calcification within these nodes may be striking. When not calcified, these nodes pose problems in differentiation from lymphoma (though almost never is there encroachment of such enlarged nodes upon the anterior superior mediastinal space), and from sarcoidosis. Since erythema nodosum may accompany primary infections with histoplasmosis^{9,15} and lymph nodes from the scalene fat pad may show "epithelioid tubercles" indistinguishable from those changes in sarcoidosis, this latter syndrome often cannot be excluded unless there is serological evidence of histoplasmosis. Even then, it is believed that sarcoidosis and histoplasmosis not infrequently are present concurrently.

Chronic cavitory histoplasmosis of the lungs is infrequent but is differentiated from advanced pulmonary tuberculosis with difficulty. In fact, some twenty per cent of the described cases of chronic cavitory disease resulting from histoplasmosis also have bacteriologically confirmed tuberculosis.¹¹ Recovery of *H. capsulatum* on culture of the sputum from these patients is frequent, however, and is correlated well with complement fixation studies on the serum. Whether cavitory disease results only from progression of an acute infection is not certain, but endogenous exacerbation would appear to be a satisfactory explanation for the pathogenesis of these lesions.

Subacute and chronic dissemination seems to be not infrequent, and almost every acute infection probably is associated with some extrapulmonary spread which establishes occult extrapulmonary foci, attested to by positive blood cultures in these patients and, later, multiple areas of calcification in the spleen. Confirmation of this remains difficult, but continuing nonspecific complaints, recurrent fever, or the presence of hepatosplenomegaly and fluctuating titres to the serologic studies, give highly suggestive evidence that histoplasmosis is present. Progression, unless corticoids are administered, seems infrequent but the duration of recurrent symptoms may extend from ten to twenty years. Many such patients have their illness labelled "psychosomatic," become discouraged and seek medical advice widely.

Acute progressive dissemination remains a serious manifestation of histoplasmosis, especially in infants and the aged, and particularly when the latter have other disease as carcinomatosis, diabetes mellitus, lymphoma or have received corti-

coids for a prolonged period of time. Miliary tuberculosis is the principal differential. The histoplasmin skin test may be negative and death from adrenal cortical insufficiency or hematologic disease from hypersplenism often ensues before a diagnosis is established.

Treatment

In light of the prevalence of this infection and the relative rarity of its serious manifestations, there seems no indication for specific therapy for most all patients with histoplasmosis. The acute infections, including acute "epidemic" pulmonary disease, subside spontaneously in the vast majority of instances, and mere symptomatic treatment and general bodily rest appear sufficient. When extensive pulmonary lesions are present it seems wise for the patient to remain off work for some three to six months, depending upon the rapidity of the clearing of the lesions, for occasional relapses and even acute dissemination may occur.

Recently, an antifungal agent, Amphotericin B[®], has become available and has some effect upon clinical histoplasmosis. Its administration intravenously over a period of days to several weeks has resulted in obvious benefit to patients with acute and chronic disseminated disease, chronic cavitory pulmonary and acute pulmonary involvement. The gain to be made must be balanced against the potential and manifest toxicity of this agent upon the given patient.

The place of the surgical management of cavitory pulmonary histoplasmosis remains to be clarified. Pulmonary resection, perhaps with the protection from Amphotericin B therapy, may become a useful adjunct in treatment. Post-resection complications are not infrequent, however, and space-closing thoracoplasties may be indicated.

The surgical removal of a pulmonary "histoplasma" seems to be unnecessary, but when such a lesion does not contain demonstrable calcium, and in spite of a positive histoplasmin skin test and even elevated titres in the serologic tests, the differentiation from pulmonary neoplasm can be made only after surgical resection and examination of the specimen. The circumscribed nodular area of disease in the lung of a histoplasmin positive patient, in which calcium deposits in concentric rings can be demonstrated, almost certainly is a "histoplasma" and few, if any, of these need be resected.

Summary

Histoplasmosis is a common infectious disease in Michigan. Between twenty and thirty per cent of adults in the heavily populated areas have been infected. The usual course of the disease is benign, but the early manifestations and the residuals, especially in lung, constitute very important problems in medical practice. Its differentiation from acute virus pneumonia, tuberculosis and pulmonary neoplasm is most important. The broader use of histoplasmin skin testing and serologic studies in patients presenting various manifestations of pulmonary disease, puzzling problems in differential diagnosis of chronic unexplained illnesses, and fevers of unknown origin will lead to more and more frequent clinical diagnoses of this most interesting infection of protean manifestations.

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TREATMENT OF PULMONARY TUBERCULOSIS WITH SEROMYCIN

(Continued from Page 1800)

Diagnostic Problems and Procedures in Pulmonary Disease

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THE preoperative investigation of patients with surgical pulmonary disease often fails to establish a reliable diagnosis. After the diagnostic possibilities of x-ray, endoscopy, skin testing and bacteriological and cytological examination have been exhausted, exploratory thoracotomy is necessary for accurate pathological diagnosis and treatment in about 30 per cent of patients.

It is not our purpose at this time to discuss the details of such diagnostic procedures, nor is it our purpose to analyze a series of cases. Our aim is to submit a few representative cases which we have encountered and to discuss the diagnostic procedures, all of which were inconclusive, and the final findings at thoracotomy.

Case 1.—P. T. M., an eighteen-year-old white man, an athlete, was admitted to Ingham Chest Hospital on December 28, 1958. His only complaint was hemoptysis for two to three months prior to admission. He had been examined and bronchoscoped at another hospital prior to transfer to the Chest Hospital. The bronchoscopist noted a bluish mass in the left upper lobe bronchus seen only with the aid of the right angle telescope. The mass did not appear to occlude the bronchus. One week after admission to the local hospital he had a rather severe hemoptysis, expectorating about $\frac{1}{2}$ cup of blood. The blood was bright red in color.

X-ray examination revealed a homogenous density in the lower left lung field which appeared mainly to involve the lingula (Figs. 1 and 2, Case 1).

A Mantoux tuberculin test was negative. Physical examination revealed a well developed, well nourished normal appearing young man. The chest was clear to auscultation and percussion. B.P. 105/60 peripheral pulses were present and normal. R.B.C. 4,71,000. Hemoglobin 14.25 gm 95 per cent. W.B.C. 14,100 with a normal differential.

On December 29, 1958, he was re-bronchoscoped at the Chest Hospital. A pedunculated tumor was seen extruding from the orifice of the left upper lobe bronchus. The mass was friable and bled easily. It appeared to occlude the orifice entirely at times. A biopsy was taken from the mass.

The report on the biopsy was that this was a bronchial adenoma (carcinoma grade I). It consisted of epithelial cells uniform in type, cuboidal in shape, arranged in acini, but formed solid masses in some areas. The tumor

showed engorged vascular spaces. There were small areas of necrosis and no mitotic figures were seen.

On the basis of these findings, surgery was performed on December 31, 1958. Upon opening the chest, the lower lobe and lower part of the upper lobe were densely adherent to the chest wall particularly along the mediastinum. These adhesions were freed and inspection of the lung showed numerous small tumors along the mediastinal surfaces of lower and upper lobes. These were fluctuant and extended along the lower lobe bronchus. The upper lobe bronchus was opened and the tumor mass could be seen to extend to the point of bifurcation of the left main stem bronchus. Therefore the only possible way to remove the tumor and the other surface tumors was a pneumonectomy. This was done.

The whole lung was submitted for pathological examination. The tumor was noted to be ulcerated and its tip projected from the upper lobe bronchus. It could be easily shelled out of the bronchus except at the pedicle just distal to the orifice over an area 0.5 cm diameter. The tumor branched and was a mould of the bronchial lumen. Its overall measurements were 2.5x2x1.5 cm. (Fig. 3, Case 1). Microscopically the tumor was described as a bronchial adenoma of carcinoid type. The cells have regular round nuclei and moderate amount of cytoplasm. They are arranged in compact masses and are separated by narrow fibrous tabeculae. The regional lymph nodes were not involved.

Such tumors are rather unusual and though considered by many to be benign yet they have been known to metastasize both locally and even to distal organs. Hence a preferable term is carcinoma grade I. Another feature of this tumor in our case was the large intraluminal component and obvious extension bronchoscopically over a period of two weeks. Recently such tumors were shown to be able to produce serotonin.

The patient made an uneventful recovery and was discharged nineteen days postoperatively in good condition.

Case 2.—G. O., a fifty-two-year-old man was referred to the Chest Hospital because of a productive cough with blood streaked sputum. In April of that year, he had a pneumonitis with pleural effusion and was hospitalized for thirteen days. On admission the right lung showed a circular density in the outer and lower field (Fig. 4, Case 2). The density was sharply demarcated and it was the impression that it represented either a loculated effusion or a tumor. On August 10, 1948, a thoracentesis failed to produce any further fluid.

On September 27, 1948, he was readmitted for an

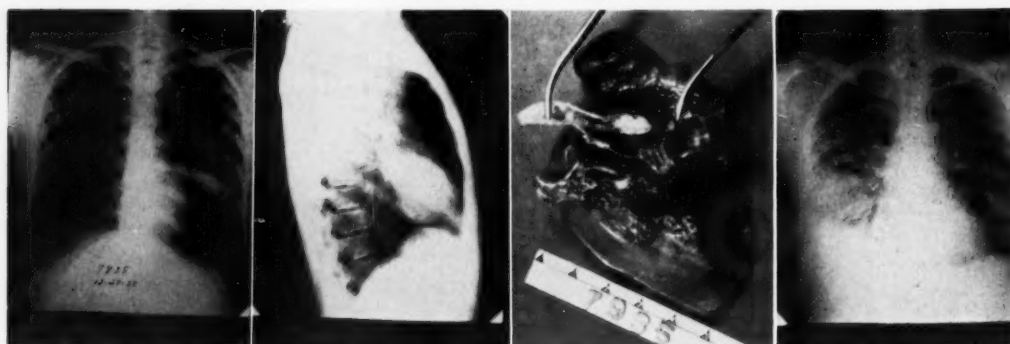


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

exploratory thoracotomy to determine the nature of the previously noted density.

Examination revealed a 3 cm fungating mass over the left parietal region which the patient claimed had been present for many years, but had gradually increased in size. A similar tumor had been removed in 1917, and recurred soon after. The skull was not eroded and the tumor was not fixed to the bone. Also a 2 cm hard fixed nodule was palpable in the right thyroid lobe. There was a palpable axillary node. The prostate was moderately and uniformly enlarged, but no tumors were felt. No other abdominal masses were palpable. There was an appendectomy scar. Serum acid phosphatase was normal. In view of the above findings it was the opinion that the pulmonary lesion was probably metastatic. Resection was advised. A pneumonectomy and pleurectomy were performed on September 1, 1948. The pathology report on the specimen indicated the mass to be 10 cm in diameter with central degeneration. Microscopically the tumor was diagnosed as an adenocarcinoma of the lung. The opinion was that it was metastatic and its character suggested origin from the prostate a finding which is not borne out by the clinical picture or the normal S.A. phosphatase. A G.I. series showed normal gastrointestinal tract. The thyroid nodule was removed and reported as an adenoma. The scalp lesion was resected and reported as a squamous cell carcinoma.

This case is interesting in that not only was the lesion in the lung metastatic but also because there were two obvious possible sites from which the tumor could have originated. The first though somewhat uncommon for spreading to the lung is the squamous cell carcinoma of the scalp where an adenomatous element from the sebaceous glands may result in the metastasis. These are usually locally invasive growths, slowly growing and distant metastasis are not common in the lungs. The thyroid nodule on the other hand is more likely to be the source of the metastatic lesion. Thyroid carcinoma show more predilection for metastases to the lung than do scalp tumors.

Eleven years after surgery, the patient is alive and operating his farm.

Case 3.—F. G., a thirty-nine-year-old woman was transferred from a general hospital with a diagnosis of left basal empyema. She gave a history of onset with

pain in the chest prior to admission. She also complained of some dyspnea. Cholecystitis was suspected and gall-bladder series and chest films were taken. A density in the left base was noted. Antibiotic therapy resulted in little improvement. The pain became aggravated and after about ten days pycelograms were obtained and were non-contributing. The density in the left base persisted. A left thoracentesis was done and a small amount of purulent fluid was obtained.

When admitted to the Chest Hospital, she felt some discomfort in chest and moderate pain. Her past history was non-contributing except for a pneumonitis in 1956. Physical examination showed an overweight female patient weighing 190½ pounds in no distress.

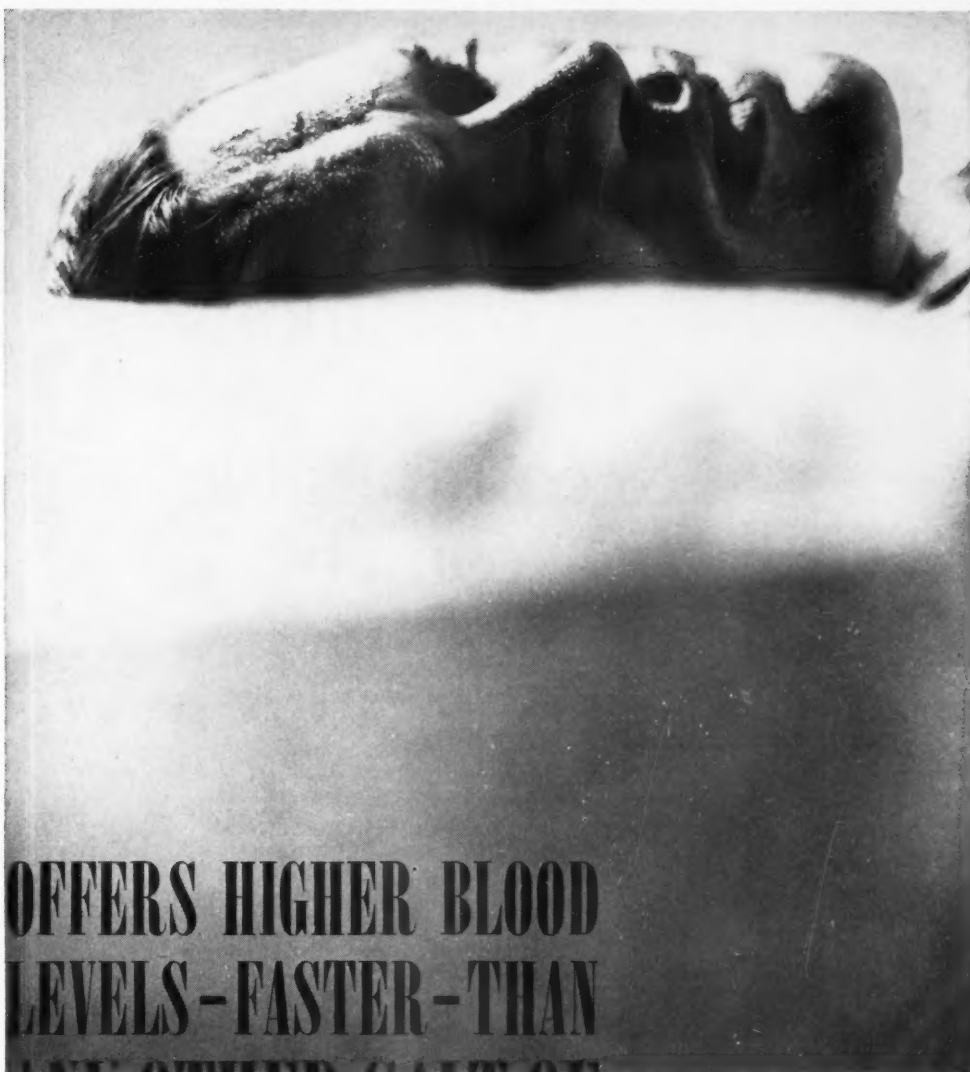
The chest moved freely. There were decreased breath sounds and decreased resonance over the left base. The patient complained of pain in the left chest on deep inspiration. Heart sounds were normal, rate was 98. B.P. 115/70. Abdominal examination revealed tenderness over the gallbladder area. No masses were palpable. She had a temperature of 100°F. Blood picture on April 4, 1959—R.B.C., 3,350,000 hgb. 9 gm, (62.7 per cent) W.B.C. 8,600, poly 69, lymph 19, eds 11. Urinalysis was normal. On April 19, 1959, she had a W.B.C. of 24,200. X-ray showed evidence of density in the left base. A bronchoscopy was done and showed a normal picture on the right. On the left side there was some mucoid material in the lower lobe bronchi but no evidence of growth. The bronchi were slightly congested.

Bronchographic examination revealed adequate filling of a normal bronchial tree on the right. On the left side there was an opacity extending to the third anterior space and the bronchi to the area were not adequately filled (Figs. 5, 6 and 7, Case 3). Thoracentesis revealed no evidence of pleural fluid at this time.

The pain was becoming more intense and there was no evidence of clearing of the density over a period of two weeks observation and antibiotic therapy. Since pulmonary malignancy could not be ruled out, an exploratory thoracotomy was performed on April 20, 1959.

On entering the chest cavity about 100 cc of relatively clear fluid was present. The left lower lobe was adherent to the diaphragm. The adhesions were freed

(Turn to Page 1829)



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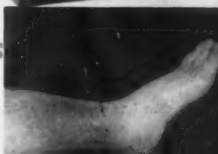
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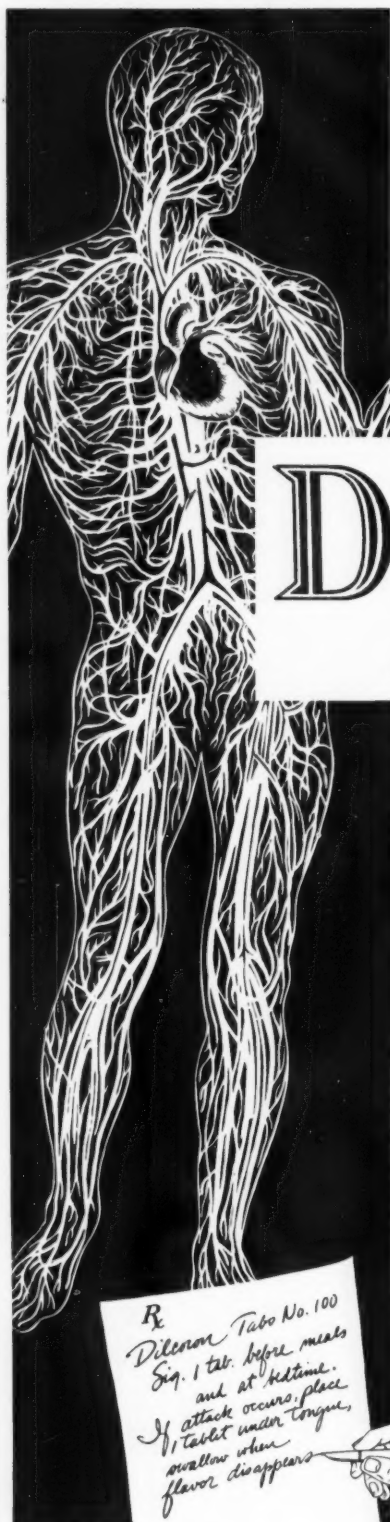


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PULMONARY DISEASE—NAFRAWI AND STRINGER

(Continued from Page 1824)

and the diaphragm was noted to be tented by the projection of a large tumor mass beneath it. The diaphragm was opened anterior to the location of the tumor and the abdominal contents palpated. The liver was free

pleural effusion with evidence of mucoid material in the left lower lobe bronchi and inadequate filling of these bronchi on bronchographic examination.

Therefore it may well pay to bear in mind that the spleen which lies under cover of the ninth, tenth, and

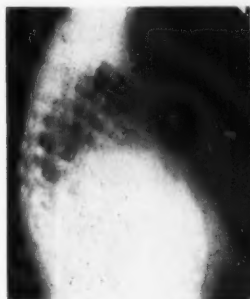


Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.

but the tumor was adherent to the stomach, intestines and lower ribs. It was dissected off these structures, and when this was accomplished the spleen was seen to be incorporated in the mass. The tumor was also freed from the left kidney. It was then evident that the tumor was of splenic origin and that in areas it had infiltrated the omentum. The tumor and spleen were resected and the omental areas involved were excised beyond a safe margin of 1 inch from the palpable edge of the tumor spread (Fig. 8, Case 3). Removal also entailed excision of a large area of the posterior-lateral diaphragm which was invaded by the growth and adherent to the superior pole of the spleen. However, it was possible after this to suture the diaphragm adequately. 0.2 mm of nitrogen mustard/kilogram of body weight was instilled beneath the diaphragm. The lung expanded adequately to fill the space and the wound was closed.

The patient made an uneventful recovery and was discharged twelve days post-operatively. The spleen measured 20 x 11 x 6 cm and showed a nodular mass 13 x 9 x 5 cm protruding from superior surface of its upper pole. The tumor mass within the spleen measured 9 x 7 x 11 cm and showed extensive areas of necrosis with softening. The margins of the tumor were well defined. Sections from the mass revealed an extremely pleomorphic neoplasm with sheets of cells which vary in size, shape, and staining reaction. The nuclei of many cells are large, vesicular with hyperchromia and in other parts are moderate, ovoid or round. The pathologist reported an unclassified type of splenic sarcoma.

In this case we were faced with a patient who had a rather severe left chest pain, from whom 100 cc of pleural fluid was aspirated and who continued to have a density in the left lung field.

The bronchoscopic examination was not diagnostic and the bronchogram suggested some involvement of the bronchi to the left lower lobe.

Splenic tumors usually present with abdominal symptoms and a splenic mass may be felt. Yet in this case the presenting symptoms were related to the chest and the issue was made more difficult by the presence of a

eleventh left ribs may cause symptoms referable entirely to the chest and even lead to exploratory thoracotomy.

In cases of doubt as to the nature of the cause of such symptoms an exploratory thoracotomy offers the advantage that it affords adequate exploration of the contents of the chest and it may easily be extended by opening the diaphragm to allow an upper abdominal exploration as well as a resection.*

Case 4.—R. E. B., a sixty-six-year-old, well developed, well nourished, white housewife was transferred to the Chest Hospital on February 25, 1954. She considered herself in good health until June, 1953, when she noted a diffuse rash which began on the palms of her hands and spread to her neck, chest, abdomen and feet. Her local physician thought this was due to soap. She was hospitalized for five weeks in the summer of 1953. Soon after leaving the hospital she developed what was thought to be a virus pneumonia. She was again admitted for a period of two weeks for treatment. The chest did not clear and the cough persisted. She was transferred to the Chest Hospital for further pulmonary studies.

X-ray examinations showed that the right lung was clear. The left lung had a homogenous density extending from the hilum to the lateral chest wall at the level of the second, third, and fourth anterior intercostal spaces. There was also some cloudiness from this level to the base (Fig. 9, Case 4). It was thought that these findings were probably due to intrapulmonary malignancy and on this basis a thoracotomy was advised.

A left pneumonectomy was performed on March 4, 1954. Sections of the lung show markedly dilated bronchi which are filled with mucopurulent exudate. Many of the alveoli are also greatly dilated and contain mucus and leukocytes. In many areas throughout the lung the alveolar epithelium abruptly changes to atypical columnar epithelium. This has an adenomatoid papillary pattern. The basement membranes are well maintained.

*This patient died at another hospital on August 25, 1959, and no autopsy was obtained.

PULMONARY DISEASE—NAFRAWI AND STRINGER

Large collections of mucus are seen (Figs. 10 and 11, Case 4).

The diagnosis was that of pulmonary adenomatosis or mucous epithelial hyperplasia. The gross picture is

work after half the day and had felt so weak that he had not worked since.

Examination revealed a fairly well nourished patient slightly anemic. The only physical finding of signifi-



Fig. 9.



Fig. 10.



Fig. 11.

similar to that in Friedlander's pneumonia. The atypical changes in alveolar epithelium have caused speculation about the importance of such lesions in the genesis of pulmonary carcinoma. The disease is generally believed to be infectious and of virus origin with hyperplastic

cance was decreased breath sounds over the right lung field.

X-ray examination showed a homogenous density in the right lung extending from hilum laterally and located posteriorly possibly in the superior division of right

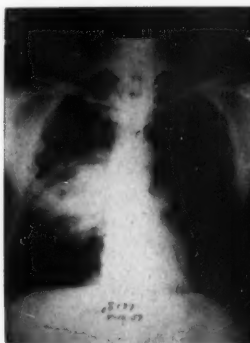


Fig. 12.



Fig. 13.



Fig. 14.

and metaplastic changes. However the collection of mucoid material is more common in non-malignant cases.

Convalescence following this procedure was uneventful.

Case 5.—W. V. A., a fifty-six-year-old white man was admitted to the Ingham Chest Hospital as a case of unresolved pneumonia. He complained of gradual loss of energy during the winter with poor appetite and a weight loss of about ten pounds. He had pain in lower right chest on cough but not otherwise. He stated that he has had a productive cough all his life but the pain had only appeared three months prior to admission. Two weeks prior to admission he had to leave

lower lobe. There was evidence of areas of rarefaction in the above density (Figs. 12 and 13, Case 5). Blood picture—R.B.C. 4,180,000, hgb. 12.4 gm, 82.7 per cent W.B.C. 19,600 with normal differential. The impression at the time was that the condition probably represented an unresolved pneumonitis.

Bronchoscopy was done on April 13, 1959, and showed a congested tracheal wall, and a sharply demarcated carina. Mucopurulent secretions were seen in the right main stem bronchus and originating from the superior division of the right lower lobe. The orifice of the subdivision was markedly inflamed and blocked by a thick bead of mucus which was washed out and aspirated. There was no evidence of growth or ulceration of the mucous membrane.

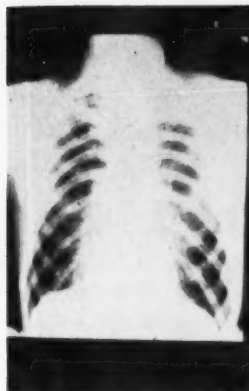


Fig. 15.



Fig. 16.



Fig. 17.



Fig. 18.

Following bronchoscopy the patient was put on broad-spectrum antibiotics and there was some clearing of the density in the right lung field until April 24, 1959 (Fig. 14, Case 5). His general condition improved slightly during that period. However owing to the fact that the area of infiltrate still existed the possibility of a malignancy though previously considered as unlikely, now became more prominent.

A scalene node biopsy was performed and showed only chronic lymphadenitis. There were no malignant cells noted in the bronchial washings which only showed an inflammatory exudate.

With these findings and with the little improvement in the patient's condition, and the persistence of the pain in the right side, an exploratory thoracotomy was advised. This was done on May 5, 1959.

On opening the chest cavity there were firm adhesions between the lung and chest wall at the level of the sixth intercostal space. The pleura over the superior segment of the right lower lobe was thickened. That segment was hard to palpation and this hardness was localized entirely to that segment. A wedge of the segment was submitted for frozen section examination and the report was an unresolved pneumonia. The remaining lung was normal. There were no enlarged mediastinal glands and it was therefore elected to proceed with a segmental resection.

The patient made an uneventful recovery except that he required a bronchoscopic aspiration one week postoperatively. He was discharged on the twenty-sixth postoperative day.

The resected segment revealed complete distortion of the architectural pattern of the lung by a chronic and subacute inflammatory picture. The alveoli were replaced by bundles of fibrous tissue, proliferating fibroblasts, young capillaries, lymphocytes, plasma cells and eosinophils. Clumps of large multinucleated cells were occasionally seen and appeared to be remnants of bronchial epithelium attempting to proliferate. Hemorrhagic areas were noted and scattered anthracotic pigment was seen in areas of unresolved pneumonia. The impression was that of an unresolved pneumonia.

However anaerobic culture of a pre-operatively obtained bronchial washing showed actinomycosis bovis.

Actinomycosis of the lung is not an uncommon condition. It is estimated that it represents 15 per cent of infections by actinomycetes. The infection is more common in farmers and people in similar work.

This patient at the time he was seen was employed in maintenance work for a landscape architect. He gives a history of having worked as a farmer previous to that. His presenting symptoms were strongly suggestive of pneumonia, though malignancy could not be ruled out.

The bronchoscopic examination incriminated the superior segment of the right lower lobe. No evidence of actinomycosis could be seen on a scalene node biopsy nor on section of the segment after it was removed. The bacteriological culture decided the organisms in this case.

Now the patient is on penicillin therapy which is agreed to be the antibiotic of choice in such cases and may have to be given for periods of up to one year postoperatively.

Case 6.—R. D., a fifty-six-year-old man, was transferred to the hospital with a tentative diagnosis of bronchiectasis. On admission he was fairly well developed but appeared chronically ill. Four months prior to his admission his usual cigarette cough became worse. It became productive with fairly large amounts of yellow sputum. He noted a 10½ pound weight loss over a period of one year with failure of appetite three months prior to admission. He also complained of dyspnea on exertion. This improved with rest.

X-ray examination revealed increased bronchovascular markings in the right with areas of atelectasis (Figs. 15 and 16, Case 6). The left lung was clear. There appeared to be some clearing of the densities in the right base in films taken prior to admission.

Bronchoscopy revealed a fungating lesion in the right lower lobe bronchus which extended to the upper lobe orifice. The mass was malignant.

A pneumonectomy was done (Fig. 17, Case 6). The patient made an uneventful recovery.

The pathology report on the specimen indicated the tumor was a squamous cell carcinoma which showed

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The Problem of Excess Tuberculosis Beds in Michigan

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THE INCIDENCE of tuberculosis has been on the down grade for more than a hundred years if the records of the Massachusetts State Health Department may be used as a criteria. Inasmuch as a considerable portion of these records preceded the discovery of the tubercle bacillus, some of the earlier statistics of necessity must be held in some doubt. However, there is probably no question that tuberculosis has been on a steady decline for more than a century in this country.

Although state laws require the reporting of tuberculosis, it must be admitted that newly reported case rates are not a true annual picture. Not all newly reported cases are promptly diagnosed either. Since 1952, the Public Health Service has defined for purposes of reporting active and probably active cases of tuberculosis. This has led to a relatively uniform reporting in the United States. The figures are complete through 1957, and indicate that from the period of 1952 through 1957, there was a 20.9 per cent decrease in newly reported cases, and an average annual rate of decrease of 4.2 per cent. The decrease in newly reported active or probably active cases has been even larger, there being a decrease of 22.3 per cent between 1952 and 1957, an average annual rate of 4.4 per cent. Prior to 1952, the reporting of active cases on the same basis was not available, but it is estimated that there has been a decrease in the active case rate of at least 28 to 30 per cent since 1950. As remarkable as this reduced incidence of tuberculosis is, it should be pointed out that the death rate has decreased even more rapidly being a decrease of more than 60 per cent.

There has been a slow decline of tuberculous infection in the population as shown by various tuberculin surveys. This slow decline should result in a lower incidence of disease. We might expect this decrease of incidence to continue unless some economic depression or some major catastrophe should result in a marked reduction of the resistance of people to the disease.

For the year 1957, Michigan reported a total of

5,011 new cases found of which 2,950 were active or probably active, or a rate of 38.3 per hundred thousand population. At the same time 448 deaths from tuberculosis were reported, 5.8 per hundred thousand being the rate. Similar states show the following: Ohio—a rate of 35.5 per hundred thousand with a death rate of 6.9 per hundred thousand; Illinois, another northern industrial mid central state, a rate of 52.8 per hundred thousand of new active and probably active cases and a tuberculosis death rate of 7.6 per hundred thousand. By contrast the more rural state of Indiana showed only 31.5 per hundred thousand active and probably active cases but a 6.9 death rate per hundred thousand. Wisconsin, on the other hand, showed only 23.0 per hundred thousand newly diagnosed active cases and a death rate of 3.6 per hundred thousand. It would appear from this that in large industrial states where non-white racial groups are heavily represented, the tuberculosis death rate will be high as well as the incidence rate. In this respect, Michigan, the second most rapidly growing state east of the Mississippi, heavily industrialized and with a large influx of non-whites, has done fairly well by comparison with other states of similar type in the area. In contrast to the United States as a whole, the Michigan rate of newly diagnosed cases is lower than the national rate which is 30.0. The death rate from tuberculosis is likewise lower being 5.8 in contrast to 7.8 for the continental United States.

From the foregoing, it appears that the incidence of tuberculosis has been decreasing in Michigan at least as fast as in the rest of the country. As the keystone in the arch of treatment the tuberculosis sanatorium has shown the effects of this progressive decline in tuberculosis incidence. It is not surprising that there has developed an excess of available tuberculosis beds in various parts of the state. The effect of this has been less noticeable in Detroit which is the area of highest incidence where the population has been growing the most rapidly, where the industrial density is the greatest, and

where the non-white population is the largest. Although the provision of tuberculosis hospitals had been fairly adequate compared with other large cities there were still not enough and, beginning in 1930, it seemed necessary to establish standby hospitals for the care of the tuberculous patient to provide early isolation and treatment. These standby hospitals reached their peak in 1933, when the number stood at twenty. Subsequently many of these institutions withdrew as the need for tuberculosis beds lessened and the waiting list shortened. The number of standby hospitals was further reduced during World War II but subsequent to this time an increased number of beds were required to meet the lengthening list in 1946 and 1947. This continued to be a problem until 1952, when there was a progressive improvement in the situation principally influenced by the effectiveness of chemotherapeutic drugs.

The State of Michigan provided money for an addition to Herman Kiefer Hospital of 253 beds which were made available in 1954, raising that institution's capacity to more than a thousand beds. More than 200 beds for tuberculosis were provided at this time at the Dearborn Veterans Administration Hospital. Similarly the new Veterans Administration Hospital at Ann Arbor provided forty-five beds for the care of tuberculosis when it was completed. The situation was further improved by development of a large out-patient chemotherapy program which has been continued from late 1951 to the present time and has permitted earlier discharge of patients from hospital.

Elsewhere in Michigan, the needs of hospitalization were gradually met by the development of county hospitals in the larger counties. More beds were added to the county tuberculosis hospitals through the assistance of the bond issue passed by the State of Michigan in 1951.

The same influences as were noted in the Detroit system began to be felt soon after 1953, in various county hospitals and coincided with the completion of new bed construction. By 1957, it became apparent that excess beds were available and these were put to other uses after permissive legislation was passed by the Michigan State Legislature in 1958. The Sunshine Sanatorium at Grand Rapids led the way in this effort and converted a portion of its institution to the care of chronically ill individuals. Soon thereafter the Saginaw County Tuberculosis Hospital branched

out into other activities and thus utilized considerable of their surplus beds as well. The American Legion in Battle Creek, a non-county institution which has cared for tuberculous patients for many years, reduced its tuberculosis capacity to less than 50 per cent of the total and are now engaged in the care of the chronically ill.

The four state tuberculosis sanatoria reached their maximum size as the result of construction completed since 1950. This construction again coincided with the leveling off and gradual diminishing of the load of hospitalized patients. The sanatoria at Hancock, Gaylord and Kalamazoo never reached their projected capacities. Restricted by law to tuberculosis patients these institutions have only this year been permitted to make changes to permit other usage. Their attention has been directed toward the mental patient of the imbecile type whose problem is mainly one of nursing care. Patients have already begun to be admitted to Hancock and some changes have been planned for patients to be admitted to Northern Michigan Sanatorium at Gaylord. At the new Southwestern Michigan Tuberculosis Sanatorium surplus beds are already being filled by mental patients with tuberculosis and further provision is being made for the care of patients of the helpless imbecile variety. The Michigan State Tuberculosis Sanatorium at Howell has shown considerable reduction in its patient census during this year as the pressure from the Detroit area for admissions has lessened. Here, too, surplus beds have been set aside for the care of the helpless mental patients who have been referred for care from the congested state mental institutions.

While excess tuberculosis bed capacity has appeared in many institutions, in no instance, except for one small one in Gogebic County, have any discontinued operations. The retirement from this field by standby institutions in the Detroit area has been anticipated from the onset although admittedly long delayed. The last of the standby hospitals in Detroit was withdrawn from service in the spring of this year. The prospects that lie ahead would indicate that some consolidation will take place as time goes on. Whether the survivors are all county and local institutions, or whether the framework of state tuberculosis institutions persists is yet unknown. That some institutions smaller and less well located doubtless will be converted to other use and further mixing of services

as has been done in Grand Rapids and Saginaw may be anticipated. Probably some state services may need to be maintained regardless of capacity since large areas of the state will otherwise be without tuberculosis hospital care.

While the nature of tuberculosis has not changed, it must be admitted that with the present day chemotherapy, it is possible to much more rapidly convert the sputum of patients with active disease than was the case in the past. In the instance of the most favorable types of disease it is probable that many physicians are tempted and actually do begin treatment of such individuals at home. One of the reasons of course that tuberculosis needs to be treated in the sanatorium is that the vast majority of patients who have clinical tuberculosis are unable to afford private care and cannot provide suitable isolation in their homes while the treatment is being given. Most cases of tuberculosis cannot adequately be treated at home as the need for laboratory control, good clinical management, and the education of the patient about the disease cannot be provided outside the sanatorium. It is variously estimated that from 10 to 30 per cent of the patients could be treated safely at home. It is obvious that these are merely guesses.

Furthermore, it should be mentioned in passing that treatment of some patients with chemotherapy alone is insufficient to bring about control of the disease. Varying upon the type of patient being treated somewhere between 10 and 20 per cent need to have additional surgery added to their general plan of chemotherapy. This usually is provided after a few months of chemotherapy preparation during which time the evidence that it will not be sufficient becomes apparent and surgery is then applied. This is usually a resection of the diseased parts of the lung which is done under chemotherapy control. The subsequent care of such patients with fairly early discharge thereafter followed by prolonged chemotherapy in the clinic results in a very adequate result. As in the days before chemotherapy, the patient's treatment is not completed in the hospital but is continued in the clinic or by the private physician. By providing chemotherapy after discharge, hospitalization has been shortened and the possibility of relapse greatly reduced.

Hospitalization at the Herman Kiefer Hospital, Detroit, has been virtually cut in half since 1950, as a result of present day chemotherapy and its ex-

tension into the Out Patient Clinic. In the past one of the problems with which we have always been plagued has been the frequent reactivation of apparently controlled cases of tuberculosis. Recent experience has been most gratifying in this regard. For example, between December 1951, and March 1958, 4,681 patients were discharged from the various institutions into the Herman Kiefer Out Patient Clinic for further chemotherapy. This number of patients suffered 323 relapses and 130 of them subsequently died. Included were seventy deaths due to non tuberculous causes and among the relapses were a number in whom a question might be raised whether the relapses were due to tuberculosis. In any event, the total over-all rate is only 7.3 per cent. This is based on the removal of 288 cases whose whereabouts were unknown at the time of the report. This relapse rate is probably less than one-fifth the rate which would have been observed in patients treated without chemotherapy.

Discussion

The incidence of tuberculosis and the mortality from tuberculosis has been falling in Michigan, at least comparable to that of the United States. This has been accelerated since 1950, due to a number of factors. At the same time the beds provided for tuberculosis care have reached a satisfactory level and in fact, have become surplus in some areas. Construction of beds in various parts of the state in 1952 through 1954, coincided with effective therapy characterized by the use of isoniazid, streptomycin and PAS. These factors of lowering incidence, better provision of beds, and improved treatment, more than counteracted the expanding industrial population in this state with the result that excess beds for tuberculosis developed. Where the needs were the greatest in the metropolitan Detroit area this permitted the elimination of standby hospitals that had been used since 1930. Elsewhere in the state, county institutions developed surplus beds and have turned to the care of chronically ill patients following permissive legislation in 1958. On the basis of several experiences available these efforts have been fairly successful. In the main, however, the amount of care necessary has been greater than was anticipated since many of these chronically ill patients were in fact acutely ill and presented serious nursing problems. The

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Traumatic Aneurysms of the Hand

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ANEURYSMS of the hand arising directly as the result of trauma are relatively uncommon. For this reason, it was believed worthwhile to present a case seen recently, and to emphasize a few pertinent facts about the lesion and its proper treatment.

A search of the literature discloses less than one hundred cases reported to date. Probably this does not reflect the true incidence, since no doubt others have been treated that have not been reported. Most of the cases are arterial in nature and very few arterio-venous aneurysms have been reported.

Traumatic arterial aneurysms of the hand are all false aneurysms, usually caused by weakening of the arterial wall by either a cutting wound from glass or a knife, or, less commonly, by a blunt force. With rupture of the arterial wall, a hematoma forms, varying in size, and limited by the surrounding structures. Because of the limitation in the hand, the occurrence of pulsation is delayed in comparison to aneurysms in other areas. The outer layer of the hematoma coagulates and is rapidly invaded by fibroblasts which surround the hematoma with a fibrous wall. Next, a cavity is formed in the center of the hematoma by the constant jet of arterial blood under pressure; this cavity is then lined by endothelium and pulsates synchronously with the heart beat. These pulsations are expansile in nature, their extent depending somewhat on the thickness of the layer of clot between the aneurysm center and wall.

Most frequently these aneurysms involve the superficial palmar arch, and there is usually a history of severe bleeding at the time of injury.

The diagnosis of false arterial aneurysm following trauma to the hand is not a difficult one if it is kept in mind. Naturally, the history of trauma must be obtained. Examination will disclose a localized swelling which on palpation exhibits expansile pulsation, and on auscultation reveals a systolic murmur. The murmur will disappear with the application of a tourniquet to the arm, as will pulsation; and the swelling will also decrease.

The treatment of this condition is excision of the sac with ligation of the vessels proximal and distal.

Failure to effect a cure has been reported with simple ligation of the vessels entering and leaving the aneurysm rather than excision. It is unnecessary to delay for the formation of collateral circulation because, fortunately, the circulation of the



Fig. 1. Pre-operative view: Ink outline size of aneurysm. Note puncture wound in center.

hand is adequate. This can be tested by obliterating the aneurysm with pressure and observing the color of the fingers.

The operation must be performed under tourniquet control, with an incision adequate to assure full visualization of all structures. In the hand, as nowhere else in the body, there are probably no structures that can be sacrificed without resulting in a defect in function.

Case Report

L. R., a thirty-two-year-old white man, was first seen October 12, 1957. The day before, while repairing a television set, he had suffered a rather deep, puncture-type laceration of the proximal portion of the palm of the left hand. Following the accident, there seemed to be a rather large amount of bleeding which the patient said was difficult to control. He was taken to a neighborhood doctor who sutured the wound.

Examination on October 12, 1957, disclosed a very swollen left hand with a one-half inch longitudinal laceration in the mid palm. The laceration had been closed by interrupted sutures of 0 black silk. Surrounding the laceration was an area of

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erythema and the patient had a temperature of 101°. There was loss of sensation over the flexor aspect of the left ring and little fingers. The initial impressions were: infected laceration of the

which measured approximately 3 cm. x 3 cm. with the healed laceration in the center of the swelling. Careful palpation disclosed a pulsation in the swelling which corresponded with the heart beat, and auscultation revealed a systolic murmur in the mass. The impression was that the patient had a false arterial aneurysm, probably involving the superficial palmar arch. (Fig. 1.)

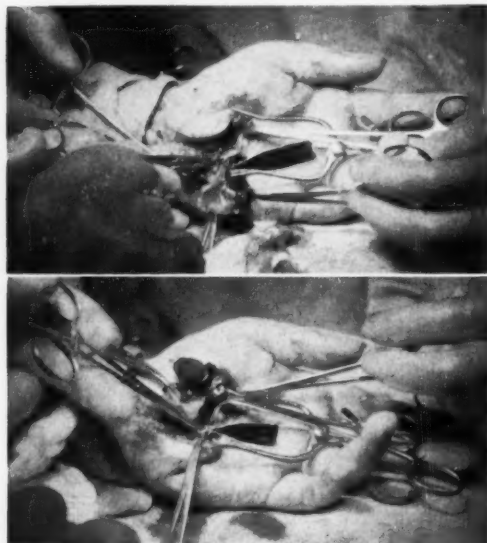


Fig. 2. (above) Aneurysm partially removed. Connection to ulnar artery demonstrated. Note adequate exposure.

Fig. 3. (below) Aneurysm reflected radially, arrow points to defect in ulnar artery. (Hemostat is in it.)

left palm, with involvement of the digital nerves to the left ring and little fingers. The sutures in the skin were removed, and at this time it was apparent that there was some heavy catgut in place in depth of the wound. This was removed without any bleeding taking place. The patient was then placed on antibiotics and continuous compresses at home. Following this, he did rather well, but after healing by secondary intention, the return of function in this hand was noted to be rather slow. On October 18, 1957, the skin was healed, but the patient complained of a throbbing sensation in the area of wound and inability to flex his fingers. X-rays at this time showed no retained foreign body.

By October 25, 1957, he had approximately fifty per cent normal hand function and was making rather satisfactory improvement. November 25, 1957, approximately six weeks after the injury, the patient returned with a swelling in the middle of the proximal portion of the left palm,

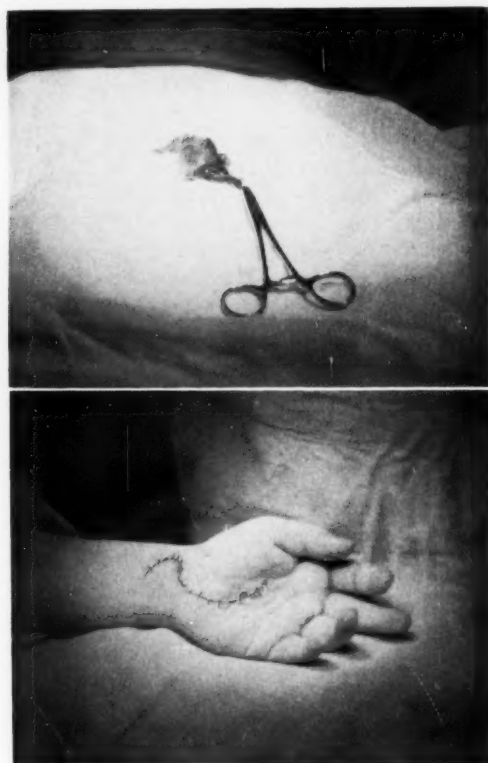


Fig. 4. (above) Resected aneurysm.

Fig. 5. (below) Picture taken after closing showing direction of incision. Note "S" used to close the wrist.

The patient was admitted to the hospital, and taken to the operating room on December 12, 1957.

Using brachial plexus block anesthesia, the aneurysm was exposed through an incision paralleling the proximal flexion crease in the palm, down over the mid portion of the aneurysm into the wrist, and then extending along the distal flexion crease of the wrist to the radial aspect and back in an "S"-shape. The median nerve was then exposed in the wrist and followed out to the hand. The skin was dissected away from the mass and the

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aneurysm exposed until it was easily demonstrated that it arose from the ulnar artery in the superficial palmar arch. The proximal and distal branches were located, (Figs. 2 and 3) and the

returned in the ring finger, and the hand function was returning to normal. (Fig. 6.)

The patient was then seen December 26, at which time function was ninety-five per cent nor-



Fig. 6. One week post-operative: showing healing scar and good function.

aneurysm was then excised. The arterial branches entering and leaving were tied with 4-0 black silk sutures. The aneurysm was dissected off the superficial branches of the ulnar nerve to the ring and little fingers during the operation. The median nerve was seen, but the recurrent median nerve was not demonstrated during this procedure. The carpal ligament was repaired with No. 36 stainless steel wire. The skin was closed with interrupted sutures of 3-0 black silk, and a pressure dressing was applied (Figs. 4 and 5). Post-operatively, the patient did very nicely, and was discharged from the hospital on the third day. The sutures were removed on the thirteenth day, at which time the patient noted that sensation had

mal, and he was working full time in his usual occupation as a television repair man.

Summary

The problem of traumatic arterial aneurysms of the hand has been discussed together with the method of treatment. One case was presented.

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DRUG ADDICTION

Drug addiction may no longer be as widespread as it once was, but its victims today are much younger than before. The current issue of *Patterns of Disease*, published by Parke, Davis & Company for the medical profession, traces the decline of drug addiction—from an all-time high of 195,000 in 1915, to 70,000 twenty years ago, to its present low level of 46,000. But where

the addict of twenty years ago was bordering on middle age, he is today "probably a male in his middle 20's who has been addicted to heroin since he was about 20." Compared to this, "this typical patient at U. S. Public Health Service Hospitals twenty years ago was a male, 38 years old, who had become addicted to morphine at 27." *Patterns* states.

The "Tired" Patient

By Hugh O. Thompson, M.D.
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IN a general type of practice today we are constantly faced with the problem of the "tired" patient. This isn't a new problem, but it has many new facets occasioned by the *modus operandi* of the present social system peculiar to the United States. I think that most of us who deal daily with these "tired" patients, have come to realize more and more that restful sleep and its subsequent refreshed feeling and peace of mind, has two prerequisites: There must first be a bodily fatigue occasioned by adequate use of our muscles daily. Then this muscular fatigue must be accompanied by a mental fatigue, which is accomplished in many ways such as the job requiring concentration, reading, or the constant decisions on the part of the housewife in running a home. Without a combination of these two factors, sleep, if accomplished at all, does not produce the refreshed, rejuvenated feeling it should.

As a result of the imbalance between physical and mental fatigue, we have two general complaints: On the one hand, we have the patient who states that he or she is just as tired in the morning as before going to bed. On the other hand, we have the patient who is tired because of the inability to get to sleep.

Twenty years ago when I started practice at the tail-end of the depression, once or twice a week I would hear the complaint, "Doctor, I'm tired all the time." The history and physical examination of the patient were usually suggestive of the underlying pathology. This started a sequence of blood examination, urinalysis, x-rays, et cetera, and, as a rule, I was able to come up with a definite diagnosis of one of the debilitating diseases.

At that time there were very few women engaged in industry. Men, in general, were working forty-eight hours a week. Since there were more men than jobs available, men really worked all of the forty-eight hours. Holding their job was of paramount importance, so each saw to it that he produced as much per hour as his fellow workers. In addition there were many more tasks confronting the workingman at home twenty years ago.

Since there was no television requiring both visual and audio attention, most of these tasks could be accomplished while listening to the radio. In such an atmosphere both prerequisites for refreshing sleep were fulfilled.

Women, at that time, were more concerned with trying the almost impossible task of keeping up with the housework. Washday, without our present automation, was an all-day really menial job. The drying and preparing of the laundry for ironing, extended well into the next day. All other household duties were equally more difficult and time-consuming than they are today. I think that another fact worthy of note is that at that time one could count on one hand the number of magazines in the drug store magazine rack, aimed at feminine interest. Women had neither the time nor the money to invest in the trivia to be found in today's magazine rack.

Those women who did work in industry or offices were faced with the same problems as the men. They found it necessary to work eight hours for eight hours' pay, and had certain household tasks to do in the evening. When and if they finished, both mental and physical fatigue were present, and sleep, which did not have to be induced, was very refreshing.

My practice was, twenty years ago and is today, composed primarily of people who are in the lower echelon or less skilled groups of workers. The transformation of the philosophy of this group concerning work has been tremendous, and reflects the thinking of both political and labor leaders. I will not go into the pros and cons of this change of philosophy since I am only interested here in the results of this transformation as it affects one small but important facet of the daily living of these people, and in turn has a marked impact on my daily care of them. Suffice it to say, that in essence this change has been one from "I'm entitled to as much as I earn," to "I'm entitled to as much as I can get for as little as I can get away with."

With this change effectively accomplished, let's

THE "TIRED" PATIENT—THOMPSON

consider the "tired" patient of today. In my office I see from forty to sixty patients daily. Probably a conservative estimate would be that 50 per cent of the adults at some time during their office visit, make the remark that they are tired all the time. Perhaps I was more acutely aware of this change because my practice had been interrupted for four years during the war, so I was not present during the transition. On my return, I soon found that I was spending so much time on histories, physicals and work-ups on "tired" people, that I could not see enough patients to make a living. The really sad part of the whole thing was the frustration I began to feel at my inability to come up with the underlying cause in terms of pathology. My files soon bulged with normal laboratory and x-ray reports and the time had come to re-evaluate the meaning of persistent fatigue in the form which I was encountering.

In this re-evaluation it seemed that the fatigue had to be due to one of two causes: Disease on the one hand, and overwork or worry on the other. The physical examination, laboratory and x-ray departments had ruled out disease in nearly all cases, so it apparently was not a disease entity with which I was dealing. The only significant physical finding was that I was seeing more and more people with systolic pressures well below 100 mm. of mercury. This, however, was a finding in patients in general, and seemed to have no relation to the peculiar fatigue with which I was dealing. There were just as many patients with hypotension who claimed no feeling of tiredness as there were who felt tired.

The answer then must be overwork, worry, or both, since I found in reviewing the histories, that in more than 50 per cent of my families both the man and wife worked, it became necessary to separate the patients into the following categories: (1) Men, (2) Women who work and keep house, and (3) Women who keep house only.

In reviewing the work history of the men, each had been asked, "Is your work too hard for you?" Most frequently the answer to this question was, "I don't work three out of the eight hours." The next most frequent answer was, "My job is very easy." In some cases, the answer was that the work was very heavy or very hard. On inquiring further, I found that some of these men who claimed overwork were in the same job classification as the men who only worked three out of the eight hours or whose jobs were very easy. I had to conclude that

any type of work would be difficult for these men. Eliminating these as overworked men, I was left with a group of men whose work was difficult or heavy and who warranted further investigation of their tiredness from the standpoint of overwork or actual disease.

Worry as a factor in producing this peculiar lassitude, presented a much more difficult problem to analyze. There are so many things people worry about—some personal, some real, some imagined. By far the largest group of these people are those with phobias occasioned by all the lay advertising to promote funds for the disease of the month. These people are difficult to deal with. Even after repeated Papanicolaou smears, electrocardiographic examinations and consultations with specialists, they can still find one or more of the eight or ten symptoms stated by the advertising as indications of cancer, heart disease, or others, and their cancerphobias, cardiophobias, et cetera, go on and on. In the occasional case when the phobia is sufficiently deep-seated to cause persistent loss of sleep, fatigue is produced. This fatigue, however, is easily recognized as something more real than that of the "tired" patient.

One would naturally think that economic worries would be of paramount importance to the man raising a family. Actually this worry is far down the list. These men feel that the Union guarantees their job no matter how poor their work, and the government guarantees almost as much pay and sometimes more if they are out of work. They all have cars, televisions and a multiplicity of automatic gadgets in their homes. It does not worry them in the least that the car they bought on a thirty-six-month plan will be worn out in twenty-four months and with depreciation and balance due they will have just enough equity to make the down payment on another one, so that they really never own a car. With car payments, house payments or rent, payments due on the constantly increasing number of mechanical work-savers, their pay is spent before it is received. Occasionally when I see one of these patients on Thursday and he says, "I'll pay you after I'm paid tomorrow," I ask if this does not worry him that with both he and his wife working, he is broke the day before pay day. They always say, "Oh, we will have enough to pay all of our bills tomorrow." When asked what would happen if his Union called a long strike or there might be a recession with no work, the standard answer is, "Well, then every-

body would be in the same boat." No, economics is not much of a source of worry to my people.

It was evident that in the vast majority of cases of "tired men," disease, work and worry were eliminated as the primary causes of their excessive tiredness.

The "tired woman" presents a slightly different problem. As already stated, they must be divided into women who work and keep house, and women who keep house only. There is, of course, a third group of women who work only, but these are for the most part the younger unmarried women whose extracurricular activities supply both physical and mental fatigue sufficient to assure restful sleep.

When a woman in the work-plus-housekeeping group complains of tiredness, it is usually fatigue from overwork. It is impossible for them to get more than four or five hours of sleep, which is insufficient rest for both mind and body. When this deficiency is compounded night after night it has a cumulative effect and true fatigue results. These women require further study to determine whether a disease process has developed, or if they simply need a leave of absence from work to recuperate.

Here again, however, it is necessary to inquire into the work classification of the woman. This was forcibly brought to mind not long ago when I entered the hospital elevator. There were two strange nurses already in the elevator and one was saying to the other, "this is the funniest place I have ever worked in. Between morning and afternoon coffee breaks, and lunch, there is no time to do any work." It would seem that too many of our non-production jobs follow a similar pattern.

The most difficult of the "tired" women to handle is the "tired" housewife. We seldom find the woman with more than two children in this category, because they have enough work, excitement, and so forth, to produce a natural healthy fatigue, and with most of the real drudgery of housework eliminated by work-savers and automation, these family women are, on the whole, a well adjusted lot.

The "tired" housewife who is really hard to convince that what she needs is to expend a little more energy, is the one with all the work-savers and automation and not more than one child to care for. She will glibly bandy the housewife's first line of defense—that "man works from sun to sun, but woman's work is never done." Ask this woman

how much time she spends each day on the 'phone, watching programs on television, reading the sex, romance, movie and the rest of the ever-increasing number of worthless magazines in today's magazine racks, and the tirade starts. I have yet to find one of these women who will admit to excesses in any of these inactive pursuits. We know, however, that if the women's television programs are watched by too few, they soon lose their sponsors, and the corner druggist doesn't handle the magazines unless they sell.

By bedtime, these women are completely fatigued mentally, but their bodies are crying out for activity. When they sleep, they toss and turn all night, which is nature's way of attempting to obtain enough activity to keep the muscles and joints functional. As a result, sleep fails in its purpose of producing concomitant mental and physical relaxation.

If this woman is married to one of our "tired" men, there is real trouble brewing. She has been sensually aroused a great part of the day by the television and magazine heroes and her man comes home too "tired" to go out and too "tired" to do anything at home.

These "tired" men and women have been too lightly treated by the technical and research-minded medical profession, but not so by the enterprising dispensers of pseudo-scientific patent medicines. A simple slogan like "tired blood" has made so much money selling one of these potions, that the company cannot give the money away fast enough in their television advertising. The sixty-four dollar question has become the \$128,000 question. There are now dozens of sleep-producing, fatigue-allaying elixirs on the market.

Ethical pharmaceutical houses have also been quick to recognize the demand for sedation and tranquilizing agents thought to be required by this large "tired" segment of our population. In answer to my query concerning the yearly consumption of barbiturates and tranquilizing drugs, one of the largest drug manufacturers replied, "We are unable to furnish total industry data involving physical measurements of this sort, but perhaps you will find an estimate of annual prescription volume somewhat helpful. We are referring to new prescriptions (refills excluded) for specialty or trade-marked products in these respective fields. In other words, for example, prescriptions written by the generic term 'Phenobarbital' would not be included.

"On this basis, around 17,000,000 prescriptions are written annually for barbiturate specialty items, and approximately 18,000,000 for tranquilizer items. Of course in computing total patient consumption, you will have to know the amount of non-specialty products used along with the annual prescription refill rate and those quantities dispensed by physicians without prescriptions."

When you combine all this with the non-prescription items and attempt to arrive at a per-capita consumption figure, the imagination is at first staggered, then it becomes alarming.

It is time, then, that we as physicians give these "tired" patients a little more consideration instead of fluffing them off with a script for the latest sedative, tranquilizer or mood elevator. I find that a very simple and short routine categorizes these patients very well.

First, a short history to bring out any symptoms of actual debilitating disease. Second, ascertain the job classification. Third, inquire into the regular activities engaged in other than work. Fourth, any family troubles, financial or unusual worries. Fifth, in the case of working women, how many children, and how much of the housework does she actually do. Sixth, a routine checkup of the heart, blood pressure, urine and hemoglobin and an occasional chest x-ray.

In less than ten minutes the patient is classified as "tired" or booked for further workups. Actually these people are not tired at all, they are just bored.

The handling of the case after diagnosis varies with the individual. Some of these people become very belligerent when some form of exercise, preferably outdoor, is suggested. The usual response is "why man, you're crazy. I'm so tired now I hardly have enough energy to take my shoes off when I get home."

If the patient is at all co-operative, his interest is stimulated by telling him he has "Americanitis." After a brief explanation of the term, he may be convinced to try the treatment. The prescription must be very definite—a brisk walk from his home to a pre-determined point about a mile away, and return, every day regardless of weather, with no window-shopping or visiting along the way. This is usually all that is necessary and in one week the tired feeling is gone, sleep comes easily and is refreshing.

A case in point as to how well this really works

was a patient who came to me recently. His story was the usual one of extreme "tiredness" so much so that he had to drink a glass of wine to get up enough energy to come to my office. He had been hospitalized twice in three months for work-ups at insurance carrier's expense, and each time he had been told to see a psychiatrist.

After running through my routine history and physical, I was aware that I was dealing with a man who for years was a three-out-of-eight-hours worker, who had no outside activities, and who, with his wife's income had no economic worries. This man seemed to me to personify the end-result of a system of which he was a victim. He had just enough energy to pull the cork and pour himself a glass of wine. Soon someone would have to pull the cork and pour for him.

I decided in his case to reverse my usual procedure and become belligerent myself. I told him he was becoming a worthless bum, and that I was going to give him some advice, and that if he did not take the advice, I did not want to see him again. On a prescription blank I simply wrote "Brisk walk to Boulevard dock every day." I handed him the prescription and told him that was all the medicine he needed. He left the office in a huff. One week later his wife called and thanked me. She stated her husband was out every day, was easier to live with, and was even talking of going back to work. Two weeks later he was in my office seeking advice on what he should do after returning to work to prevent a recurrence of the "tired" feeling. We talked over all the possibilities and he decided to continue his walks after work each day.

These people represent the transitional period in which we find ourselves. A time when labor leaders shout the age-old fear of automation decreasing the number of jobs, and politicians, through one means or another, are forced to go along to get the labor vote, and the confused worker sits idly by with the false notion that the world is his without the taking.

As physicians, we must be patient with the resultant "tired" worker. We must be sure that his fatigue is not the result of pathology, and guide him into a more satisfying and healthy way of life. To do so we must learn how best to counteract such thoughtless advice as is given each morning by one Union commentator, who signs off by saying, "Take it easy pals—but take it."

Megacolon

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AT SOME point in each medical practice, the physician is confronted with the diagnosis of megacolon rendered him by the radiologist. Immediately the practitioner asks himself: what does this imply, what are the causes of such an entity and what is to be done for such a patient? It is the purpose of this article to define more clearly megacolon and its many ramifications and briefly outline acceptable management of such cases.

Megacolon can be defined as an abnormally large size of the colon due to dilatation and hypertrophy. It is more prevalent in childhood and pre-adolescent periods. It can be classified under two major groups: (1) *Functional* and (2) *Organic*—(a) true Hirschsprung's disease, and (b) obstructive lesions of anus or colon other than Hirschsprung's disease.

Functional Megacolon

In this category, the enlargement of the colon results from chronic or intermittent fecal impactions, causing degrees of large bowel obstruction with resulting elongation and hypertrophy of the bowel wall. Many children, as well as adults, with fissures or other inflammatory lesions of the anal canal, and because of the pain associated with defecation, resist the urge to stool. This sets the stage for chronic constipation with fecal impactions becoming commonplace. Faulty handling of bowel behavior during childhood with the overuse of catharsis by the parents is often the cause. It should be clearly understood that the megacolon is compensatory. Anatomically and histologically, the colon is without defect.

In this group, patients usually present themselves with the complaint of chronic constipation. In almost every instance the symptoms of constipation began some time after birth. A close look into the personality of this type of patient discloses a strong bowel fixation. Relatives, especially the parents, further emphasize to the doctor the difficulties the patient experienced in bowel behavior

during the pre-adolescent, adolescent and adult periods. Most are cathartic addicts. They have used numerous and various laxatives in an effort to establish the eagerly-sought-after bowel regularity. Impactions are frequent and severe, necessitating at times general anesthesia for removal. In the long established cases, extra harsh bowel irritants are resorted to with little results and enemata become less and less effective. The gamut of non-constipating diets, along with popular food fads, are hopefully employed, resulting in many of these people becoming "diet cripples." They complain of headache, fatigue, or sense of fullness or bloating and feeling generally run down. Actually these people make a career out of having a bowel movement. Barium enema studies show greatly enlarged, redundant colons, especially in the sigmoid and descending limbs of the large bowel. Peristalsis may seem sluggish but it does expel the contrast medium well. There are no areas of constriction as seen in true Hirschsprung's disease. Diagnosis is confirmed by the presence of ganglion cells in a biopsy of the lower rectal wall.³ In all cases of doubt this procedure should be employed.

Organic Megacolon

True Hirschsprung's Disease.—The pathology in this type of megacolon is due to the absence of parasympathetic ganglion cells in part or all of the large bowel or rectum. The lower portions of the sigmoid and the rectum are nearly always the segments involved. Actually, as far as a diagnosis is concerned, this may be considered extremely fortunate. Mass movement and contraction of this aganglionic segment does and can exist. Nevertheless, the movement is unordered and propulsion of the fecal matter through this area is prohibited.⁴ Obstruction results with dilation and enlargement of the colon proximal to the aganglionic area. Clinically, the digital and proctoscopic examinations disclose a normal, nondilated anus and rectum. There may be small particles of firm feces present. In contradistinction, the rectum of a person suffering from functional megacolon is dilated,

From the Active Staff, Ferguson-Droste-Ferguson Clinic, Grand Rapids, Michigan.

capacious and contains large amounts of impacted fecal matter. The history of constipation goes back to birth in all cases of true Hirschsprung's disease. In the well advanced cases of Hirschsprung's disease, dilation of the colon seldom goes to the anus, but rather terminates at the sigmoid or upper rectum with a normal appearing segment of bowel below it.¹

X-ray is of definite help in the diagnosis of this disease. Typically there is a narrowed rectal segment with proximal dilation of colon. Proof that the disease exists can only be made by the absence of ganglion cells in biopsies taken of the muscular wall of the lower rectum.

Megacolon Due to Organic, Obstructing Lesions of the Anus and Colon.—By far the most common lesion producing this type of megacolon is stenosis or stricture of the anal canal. Stricture following surgical correction of an imperforate or ectopic anus, is the most common etiology of this kind of megacolon in the child. Many times the surgical procedure is complicated because of the lack of proper mechanical dilatation in the postoperative period. Certainly scarring and stenosis of the anal canal following hemorrhoidectomy or other anorectal operations contribute to great difficulty in bowel passage with various degrees of obstruction. Congenital malformations of the colon or rectum that decrease the luminal size of the bowel promote these changes in the colon. Tumors of all types, intrinsic and extrinsic, and inflammatory diseases of the anus, rectum or colon may be contributing factors.

Therapy

Functional Megacolon.—The anus should be thoroughly inspected and all disease should be corrected. Barium enema should be done for completion of the examination. This procedure also induces a sense of security in the patient's mind as thoroughness is reassuring. In cases where the diagnosis between functional megacolon and true Hirschsprung's disease is not clear-cut, a rectal biopsy should be done and a search for the presence or absence of ganglion cells made.

Treatment must be considered long-ranged, requiring a persistent patient and a persistent doctor. The doctor must spend time to gain insight into the personality and behavior pattern of the patient. It is important to impress the patient that his difficulty is not based on organic disease and in such

a way dispel what bowel fixation is present. These people should be placed on a routine that promotes understanding of their condition, fortified with confidence within themselves.

The diet, although not strict, should be such as to increase bulk and ballast. This can be done by avoiding the common, constipating foods and increasing the intake of fresh fruits and vegetables. The water intake should be increased to six or seven glasses per day. A daily enema should be taken for the first two weeks. This removes all impactions present and allows the bowel to regain normal size with enhancement of its contractile ability. Hydrophilous agents can also be employed during this period in order to increase bulk and soften the fecal mass. During the first part of the training period, Mecholyl Bromide, 100 mg. per day for children and 200 mg. per day for adults, may be used in the very refractory cases.²

True Hirschsprung's Disease.—Therapy in this instance is operative in nature and directed toward surgical removal of the aganglionic segment of bowel. Sympathectomy or removal of the large, dilated segments of bowel, as proposed in the past, are not considered effective and should not be done. Swenson's operation, as outlined for this anomaly, is entirely satisfactory and is the treatment of choice. This procedure can be completed in one stage and, if dissection is carried out close to the bowel, leaves the patient with satisfactory anal sphincter and urinary bladder control with no sexual dysfunction in later life. In cases where a proximal colostomy has been performed at a time prior to corrective operation it may become extremely difficult for the surgeon to identify the diseased segment. In all cases the presence of ganglion cells in the proximal bowel end must be proven microscopically before anastomosis is done.

A word of warning should be injected at this point concerning enemas given people with megacolon. There are many reports in the literature concerning fatalities resulting from the giving of enemas. It is felt that the large, absorptive surface of the much dilated colon transmits large quantities of water to the vascular space, which may in turn lower the electrolytes, especially sodium, to a critical level. It has been postulated that the enemas given should be an isotonic saline solution. Needless to say, enemas should be given cautiously to patients with heart disease.

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Intestinal Obstruction After Colon Surgery

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SURGERY of the colon has become common in the last ten years. This has resulted in a sharp increase in intestinal obstruction from this source. An incidence of from 3 to 10 per cent has been estimated to occur specifically as a result of such colonic surgery. From this, the importance of this subject is apparent.

Many and varied types of bowel obstruction may follow colon surgery, in addition to the non-specific small bowel obstruction which may occur as a result of any abdominal procedure. Colon surgery, when associated with colostomy, carries with it an incidence of almost 25 per cent of complications and more than one complication may occur. Again, the increasing numbers of colostomies being performed is reflected in an increasing number of small bowel obstructions.

The more common mechanisms causing small bowel obstruction after surgery of the colon are: (1) the new floor in the peritoneal cavity with extensive suturing, (2) the gutter lateral to the colostomy on the left, (3) the gutter beneath the transverse limb if the colostomy is brought out in the midline, (5) the abdominal incision, in itself, and finally, (6) the trauma of surgery may predispose to the development of obstruction. In addition to these, one may find small bowel obstruction as a result of leakage at the suture line.

Types of Obstruction

The types of obstruction following colon surgery may be divided into large groups. These are:

1. *Not Specifically Related to Nature of Surgical Procedure.*—These obstructions are due to adhesions between loops of small bowel or the anterior abdominal wall. All such obstructions are non-specific to the colon surgery *per se*. Obstructions of this type may follow any abdominal surgical procedure.

2. *Arising in Connection with Pelvic Floor.*—Adhesions between the small bowel and the pelvic

peritoneal floor may be a source of intestinal obstruction. Such adhesions to the pelvic peritoneal floor may be the result of long "tails" of suture used. A rent may be left in the pelvic floor which permits bowel to slip through and become obstructed. Obstruction produced in this fashion may be of Richter's type in which a small portion of the anti-mesenteric surface of the small bowel may become strangulated. Obstructions of this type are often difficult to diagnose because the continuity of the small bowel is not interrupted. One of the first indications of its presence may be the development of a perforation and pelvic abscess.

The extensive suturing of the pelvic floor and the presence of loops of terminal ileum lying upon it presents favorable conditions for adhesion formation and the possible development of small bowel obstruction.

Obstruction of the terminal ileum may occur. In this, angulation and obstruction of the terminal ileum is produced by tight pull on a flap of pelvic peritoneal floor to which the terminal ileum may be attached. Stretch on this flap may cause a kinking and obstruction of the terminal ileum. To prevent this, the terminal ileum must be freed from its point of attachment before the pelvic peritoneal floor is repaired.

3. *Originating in Vicinity of Colostomy.*—Obstruction of the small bowel may occur by adherence to the peritoneal aspect of the colostomy wound or to the edge of the mesocolon. This is responsible for a small percentage of such small bowel obstructions.

Intestinal obstruction may occur by herniation of a loop of small bowel through the colostomy wound. It may then become strangulated there. This is by no means rare. The small bowel may emerge through the opening in the abdominal wall through which the colostomy passes. The small bowel may pass between the lateral abdominal wall and the colostomy spur undergoing volvulus. On the other hand, the small bowel may become obstructed by angulation of the limb which passes

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between the colostomy spur and the lateral abdominal wall.

If the colostomy opening is made in the midline, the small bowel may herniate beneath the transverse portion of the colon passing from left to right to reach the midline. In addition, a loop of small bowel may become adherent to the colon at the point at which it emerges through the peritoneum.

A rather rare type of small bowel obstruction may occur in which the bowel herniates between the peritoneal leaves of the iliac mesocolon.

4. *Originating in Vicinity of Colonic Anastomosis.*—Obstruction of the colon may occur at the site of anastomosis. If the colonic edges are turned in and too large a cuff is made, obstruction of the colon may occur. Infection in the suture line may produce a sufficient degree of stomal edema to effectively obstruct the bowel. This type of colonic obstruction subsides with subsidence of the edema. Infection around the suture line, of the anastomosis, or leakage at the suture line results in local peritonitis. As a result, ileus sets in. Leakage at the suture line may become walled off and form an abscess. This may cause intestinal obstruction of several types: (1) paralytic ileus usually develops, (2) an abscess may result in adherence of a loop of small bowel to it with resultant angulation and mechanical small bowel obstruction, (3) the edematous changes in the small bowel wall may cause obstruction, and (4) the abscess may reach a size so large as to compress the colon or mechanically obstruct the small bowel by compression.

Drainage of an abscess due to a leak at the suture line may result in the formation of a fistula. This may be responsible for the development of mechanical intestinal obstruction by a loop of small bowel becoming adherent to it or being involved in the inflammatory process which results from the fistulous tract. All these acute inflammatory types of mechanical small bowel obstruction are best treated conservatively by means of intestinal decompression tube. Some may require surgery if the obstruction does not relent upon the subsidence of the inflammatory process.

5. *Obstructions of the Colostomy.*—Stricture or stenosis about the emerging loop of colostomy is the most common complication. The narrowing in most cases occurs at the skin level and may be noted several weeks postoperatively. This is more likely to occur in a single loop than in a double

loop colostomy although it may occasionally occur with a double loop colostomy. Many surgeons believe that the stab wound alone is a responsible factor in this type of obstruction because of an inadequate opening through the abdominal wall fascial layer. It may be difficult to decide at the time of surgery between an opening in the abdominal wall that may be snug and one that is too large permitting herniation of bowel. In many cases, the development of a wound infection predisposes to stenosis as a result of the fibrosis associated with healing. This may obstruct the colostomy. Ideally, the colostomy should be flush with the skin and readily admit the index finger. In addition, a circle of skin and fascia should be excised as a channel for the emerging colostomy loop. This prevents too tight closure of the deeper layers of the abdominal wall. As an additional safeguard, the colostomy loop should be brought out straight through the abdominal wall and brought out loosely to avoid tension on the loop. Necrosis of the colostomy loop may occur in those cases in which there is impairment of the blood supply due to undue tension on the mesentery or by compression from the abdominal wall. In these cases, the mesocolonic vessels may become compressed and thrombosed. Such necrosis may occur as a result of tension, tight closure, or improper division of the mesocolonic vessels.

As a result of the present widespread use of steroids, a rather unusual complication of colostomy may occur. This consists in the exteriorized loop of bowel falling back into the peritoneal cavity because of failure of tissue reaction to fix it. A similar accident may occur as a result of undue tension of the colostomy loop with inadequate mobilization. In some instances, the bowel may simply retract into the abdominal wall. In such cases, extensive wound infection occurs whereas peritonitis with resultant paralytic ileus results if the loop falls back into the peritoneal cavity. Immediate surgical removal of the retracted loop usually results in a successful outcome unless the accident is not recognized early enough to avoid widespread peritoneal contamination. In this latter event, death may occur.

One of the most common complications associated with colostomy is prolapse of the colonic mucosa. This is usually not associated with mechanical intestinal obstruction. A large segment of mucosa may protrude, however, resulting in severe edematous changes and obstruction. Gen-

erally, this complication is troublesome to the patient but is not of serious consequences. Revision of the colostomy may be required however.

6. *Following Abdomino-Perineal Resection.*—Generally, abdomino-perineal resection carries approximately three times the incidence of small bowel obstruction as compared with anterior resection. This is less the result of handling of the bowel than of the artificially created conditions associated with the operative procedure itself. Since handling of the small bowel in the course of anterior resection differs little from that in abdomino-perineal resection, other factors must be responsible. The three sources of small bowel obstruction to account for the differences are: (1) the cut edge of the mesocolon, (2) the suture line of the pelvic floor, and (3) the aperture between the left pericolic gutter and the terminal colon as it ascends through the abdominal wall.

7. *Ileostomy Syndrome.*—In addition to acute intestinal obstruction produced by colon surgery, the "ileostomy syndrome" has been considered as being due to a partial obstruction of the ileum. This is prone to occur after total colectomy with ileostomy. Although the cause of this syndrome is still speculative, the consensus appears to suggest that it is a potential complication inherent in the establishment of any ileostomy and may be due to an interference with the neuromuscular co-ordination of the bowel as it passes through the abdominal wall. This results in a functional type of intestinal obstruction. Turnbull² has suggested that the ileostomy dysfunction producing this type of obstruction may be due to edema of the presenting limb. This is suggested by the prompt improvement that often occurs when a catheter is inserted into the ileostomy and suction applied. It seems that the small bowel is not tolerant to exteriorization over long periods of time unless the serosa is covered in some fashion. This may require skin graft or suture of the mucosa to the skin edge thus protecting the serosal surface and thus maturing the ileostomy.

8. *Rare Obstructions After Colon Surgery.*—An unusual and rather rare type of small bowel obstruction was that reported by Mackenzie.¹ This patient had a perineal excision of the rectum. At operation for acute intestinal obstruction nine years later, it was found that the colon distal to the colostomy, which had been made, was gangrenous.

The gangrenous bowel proved to be the blind efferent loop of large bowel leading from the colostomy. Apparently this bowel had been permitted to hang freely in the peritoneal cavity as a pendulous sac. At operation for obstruction, the blind end of colon was resected leaving a 1.5 inch stump at the colostomy. Recovery was uneventful.

Obstruction of resected colon has been found rarely as a result of an air-filled balloon of an intestinal decompression tube which has been lost. This cannot occur if such tubes are properly used. When this accident does occur, however, the management depends upon whether the obstruction is complete or incomplete. If incomplete, a waiting policy should be adopted with the patient breathing pure oxygen at frequent intervals. By so doing, the intestinal gas within the balloon often diffuses out. If the air-filled balloon comes to lie near the colostomy stoma, it may be fished out with a long hemostat. An occasional case may require reoperation. At this time the balloon may simply be broken by compression between the palms of the surgeon's hands and the empty balloon permitted to be excreted. Colotomy is not indicated.

Diagnosis

A diagnosis of small bowel obstruction may be very difficult to make in association with or following surgery of the colon. This is especially true of those cases in which the obstructing process develops within the first four or five days after surgery. At this time, symptoms complained of may be ascribed to "gas pains" or the ileus which follows any cutting operation upon the bowel. From the point of view of diagnosis, obstructions after colon surgery fall into three groups: (1) cases in which an exact diagnosis can be made clinically and radiologically, (2) cases in which the diagnosis may be considered as probable but not certain, and (3) cases in which the diagnosis not only cannot be made but is not even suspected. This last group fortunately constitutes a small percentage of cases but accounts for most of the deaths. Even in this last group, however, a careful review of the problem from time to time throughout the first forty-eight hours from onset of symptoms often permits a correct diagnosis. Even when an exact diagnosis is not certain, the indications may be sufficient to justify surgical exploration.

In reviewing small bowel obstruction after colon surgery, the obstruction was found to occur in most cases between the sixth to the eighth day. This

appeared to be the most critical time. The understanding reluctance of the surgeon to believe that his patient has developed small bowel obstruction within the first week of surgery is responsible for much delay in making a correct diagnosis. However, in those cases in which a diagnosis is made and when prompt surgical intervention is instituted recovery is usually prompt.

The management of obstruction following major colon surgery must in no wise differ from the treatment of intestinal obstruction as a primary disease. The only possible exception to this being those cases of obstruction caused by a plastic exudate. In cases of this type, the management should be the same as for small bowel obstructions in the inflammatory distention group in which peritoneal exudate or pelvic abscess is the causative agent. In such instances, intubation by a long tube, intestinal decompression, the liberal use of antibiotics and adequate hydration with correction of electrolyte or protein deficiencies may satisfactorily carry the patient over the period of obstruction caused by the inflammatory process. As a result, many of these cases will not require surgical intervention.

Constant vigilance must be exercised when this course of action is decided upon because such obstructing processes may require surgical intervention at any time during the course of the conservative management.

In many cases, exploratory operation may be indicated even when a suspicion of intestinal obstruction is present and when intestinal intubation does not result in a prompt relief of all symptoms within the first twenty-four to thirty-six hours.

Partial wound dehiscence is a common cause of

small bowel obstruction. In many cases, the wound separation involves only the deeper layers and the sutured skin remains intact. A sero-sanguinous drainage from the incision should be presumptive evidence that such a separation has occurred. It is not infrequent that a loop of small bowel becomes herniated through an opening in the peritoneum and becomes obstructed. The prevention of this source of obstruction requires that all suspected wound dehiscence cases have the wound re-opened and examined for herniated bowel. If found, a secondary closure of the incision should be performed. This cause of small bowel obstruction is little mentioned but it is nonetheless an important one. Many surgeons, who would adequately and promptly deal with a complete wound dehiscence, fail to recognize the fact that moderate degrees of wound separation are far more dangerous because they are often not recognized. It is the hidden wound separation that causes most of the small bowel obstructions that result fatally.

In the final analysis, the surgeon must be eternally vigilant following colon surgery and must constantly be on the look-out for signs of small bowel obstruction. He must be prepared to deal with this complication promptly in accordance with the dictates of good surgical judgment and common sense.

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MEGACOLON

(Continued from Page 1843)

Obstructive Megacolon other than Hirschsprung's Disease.—In these cases, the therapy is operative and should be directed toward the correction of the obstruction present. Anal stenosis, no matter what the cause, must be alleviated. Obstructive tumor, intrinsic or extrinsic, and narrowed inflammatory stricture of the bowel after proper preparation should be resected, employing the essentials of good surgical technique.

Summary

1. Megacolon is briefly defined and classified.
2. Biopsy of the wall of the lower rectum is stressed as a means of differentiating between *true*

Hirschsprung's disease and *functional megacolon*.

3. Conservative and surgical management of the different types of megacolon is discussed and briefly outlined.

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President's Page



Milton A. Darling

President

Michigan State Medical Society

A new year in the history of the Michigan State Medical Society has begun, and we are entering it with a firm resolve to serve the Society to the very best of our ability.

However, it is far more than a one-man job. Even the unfailing devotion of your Council, your Committee Chairmen and members will succeed only as you cooperate.

November is perhaps the most beautiful month of the year. Nature has fulfilled its annual obligations and the harvest has been gathered. Let us also count the accomplishments of this past year, burn any remaining leaves of dissension, and approach the new and old problems confronting us as good doctors and good citizens. (Never must we overlook our voting privileges.)

One important duty is attending the medical meetings which are carefully arranged for your benefit. Their diversified programs should reflect your interests and they deserve your support.

Your officers, too, are desirous of sharing these interests. Communications and suggestions will be greatly appreciated and given every consideration.

Let this be a record year of achievement in the annals of our Society!

Editorial

THE TUBERCULOSIS SUSPECT

Modern methods of tuberculosis case finding have isolated a terrified group of persons labeled "suspicious tuberculosis." The stigma associated with this diagnosis is not of an abstract moral, ethical or even pestilent nature, but is manifested in the stark realities of economic insecurity and threats to dissolutions of family ties.

The treatment of proven tuberculosis should begin in a sanatorium. Here physical facilities, experienced personnel and comprehension of the disease in all its ramifications are most apt to result in its arrest, as well as in a happy solution to the ancillary social problems which inevitably accompany isolation and prolonged hospitalization. Should all tuberculosis suspects, however, be advised to enter the sanatorium for diagnosis?

The sanatorium patient must reorganize his life and remodel plans for the security of his family. He must give up a job and the income upon which his living has been predicated. Inevitably, extensive debts, time payments, insurance obligations, mortgages and the like are involved. Many Americans today live beyond their means. This appears true regardless of economic status. Under ordinary circumstances obligations are met, but if income stops for even short periods, disaster may result. Moreover, a job may not exist when the patient is discharged.

Responsibilities of raising a family may be left to a spouse incapable of assuming such an added load. A child may be forced to leave school in order to add to the family income. Young married children may be compelled to assume financial responsibilities for parents at a time when they themselves are struggling. A wife may be obliged to leave children inadequately supervised while she is at work. Sanatoria may be great distances from the home so that visits from family and friends are infrequent and unsatisfactory.

Some persons are stable enough to solve these and other complex problems, but to many no solutions are readily available.

Should all tuberculosis suspects be forced into a position where such socio-economic complications can arise or can this be avoided without en-

dangering the health of the patient or those with whom he comes into contact?

It is essential first to recognize certain pitfalls in the diagnosis of pulmonary tuberculosis:

(1) Chest x-rays: Roentgenology points the way in the diagnosis of pulmonary tuberculosis, but the microscope settles the question. No one realizes his limitations more than an experienced roentgenologist. He reports suspicions, possibilities or probabilities, but seldom makes a forthright diagnosis of active tuberculosis. His suspicions, therefore, must be evaluated by a clinician. His impressions are less accurate when he is interpreting miniature films and especially so when these are being reported by the scores or more.

(2) Tuberculin Skin Test: A positive skin reaction supports or suggests the diagnosis of tuberculous disease. It is not definitive. Sensitivity may decrease or disappear in the course of high fever, exanthematous disease, miliary tuberculosis and terminal pulmonary tuberculosis. The tuberculin skin reaction is frequently abolished or reduced in intensity during ACTH or cortisone administration. A very small percentage of persons may fail to react to tuberculin after a natural tuberculous infection. The test itself may be improperly administered, the material inert or the syringe contaminated with other diagnostic materials such as coccidioidin or histoplasmin.

(3) Bacteriology: Although the demonstration of virulent tubercle bacilli in pulmonary secretions or gastric contents is the one inescapable criterion of active pulmonary tuberculosis, bacteriological examinations are not infallible. Glassware used in the examination may be contaminated and false positives result. Saliva or postnasal discharges may be collected and examined, although only secretions from the tracheo-bronchial tree are significant. While acid fast bacteria may be reported in sputum smears, the presence of tubercle bacilli can be substantiated only after cultural procedures or animal inoculation. Finally, as in all laboratory procedures, results are only as good as is the technician who reports them.

(4) Animal Inoculation: This is sometimes

necessary to differentiate between pathogenic and nonpathogenic acid fast bacilli, and may be helpful when dealing with specimens repeatedly contaminated on culture. It should be emphasized that the guinea pig may have pre-existing spontaneous tuberculosis and results are not dependable unless the animal has been skin tested prior to inoculation.

For these and other reasons, it is often difficult to establish a diagnosis of pulmonary tuberculosis. When facilities are available the private physician often refers the patient to a sanatorium in the belief that there early diagnosis can be made most readily. This is not always true. At least four factors tend to delay the proceedings:

(1) Because of the nature of tuberculosis, sanatoria physicians tend to think in terms of months and years rather than days and weeks. Treatment in the sanatorium proceeds leisurely and the urgent atmosphere of a general hospital or private practice is notably absent.

(2) Decisions may be affected by the current shortage of patients and resultant superfluity of beds. This in no way implies a conspiracy to keep patients who do not require hospitalization, but the maintenance of census and state subsidies might unconsciously influence some judgments.

(3) Because of their highly specialized interest in one disease—tuberculosis—sanatorium physicians are sometimes overzealous in eliminating this diagnosis and slow to establish the diagnosis of non-tuberculous diseases.

(4) Sanatorium physicians often recommend hospitalization instead of assuming the responsibility for outpatient diagnosis.

As a consequence the tuberculosis suspect may be hospitalized for a long time before the diagnosis of bronchogenic carcinoma, for example, is established, or active tuberculosis eliminated. By the time he is referred back to his private physician or to a specialist in diseases of the chest, antagonisms may have developed and the patient might turn instead to one of the fringe type healing arts for treatment.

In such situations the private physician is the instigator and the sanatorium director the accomplice in what must be considered at best poor management.

There is no doubt that a certain grace must be allowed in decisions reached because of the communicability of the disease. It is certainly prefer-

able to hospitalize a patient unnecessarily than to expose his family and community to the risk of contracting his disease. Errors must be made on the cautious side.

It is my earnest contention, however, that the family physician should be reasonably certain that his patient has active tuberculosis before advising admission to a sanatorium. The temptation to transfer the responsibility of diagnosis to the sanatorium must be great. Indeed, the practitioner may believe this course of action to be proper.

The generalist should be reminded, however, that there are many simple things which he can do to settle the diagnosis. The following are suggested as procedures which may all be done on an outpatient basis:

(1) Take an adequate history and perform a physical examination. Although it should be unnecessary to mention this, patients are sometimes to be referred to the sanatorium unquestioned and unexamined.

(2) Refer the patient who has a suspicious miniature x-ray for a 14 x 17 film. This should preferably be interpreted by a radiologist.

(3) Make a conscientious effort to obtain previous chest x-rays. The value of comparative films cannot be overemphasized. These alone may establish the diagnosis of inactive tuberculosis or non-tuberculous disease.

(4) Obtain special views of the chest. Laterals, obliques, apical lordotics or laminograms should be ordered in many instances. Different projections alone may offer a simple solution to what may originally appear to be a complex problem.

(5) Skin test all patients. Routine tuberculin and histoplasmin skin testing should be done on all patients with diseases of the chest. Coccidioidin and blastomycin should be added in special instances. If the limitations and significance of skin testing is comprehended, the diagnosis may be established earlier, or at least certain diagnoses eliminated.

(6) Obtain sputum smears and cultures for tubercle bacilli, fungi and other organisms as indicated. If sputum is not available, gastric smears and cultures should be ordered. Guinea pig inoculations can confirm pathogenicity.

(7) All intimate contacts should be skin tested and/or x-rayed.

(8) In doubtful cases consultation can be obtained from a competent specialist in diseases of the chest.

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(9) All diagnostic procedures up to, and including thoractomy should be done as early as possible.

If the sputum or gastric smears are negative there is usually no need to separate the suspect from his environment while awaiting the results of cultures. This is especially true if the patient is asymptomatic. The family physician should keep in close contact with his patient during this waiting period and follow his subsequent clinical course. Interval x-rays are indicated until a definite diagnosis is established or activity of the lesion ascertained.

Historically, the *care* of tuberculosis has been a governmental responsibility. Because of the nature of the disease this seems reasonable. *Diagnosis* of diseases of the chest, on the other hand, should be made in the office of the private practitioner.

RICHARD L. RAPPORT, M.D.

Chairman, Tuberculosis Control Committee, MSMS

NATIONAL LEGISLATION

This year's session of Congress passed only one bill of major significance to the medical profession. Senate Bill S.2162 was passed in the last few hours. This establishes contributory medical care insurance for about two million Federal workers and nearly three million dependents. The medical profession, Blue Cross and Blue Shield have been advocating this action for a number of years, believing that Federal employees should enjoy the same health benefits as employees of other organizations. The official who will supervise this program is to be appointed by the Civil Service Commission.

The international medical research bill (S.J. Res. 41) passed the Senate but is still in the House. The Congress did appropriate over \$400 million to subsidize medical research. The Keogh Bill (HR 10), which would allow professional persons to establish retirement funds before income tax, is still in the Senate. The controversial Forand Bill (HR 4700) is still in the hopper ready to be considered at next year's session.

WE LOST THREE

During the summer just past, the medical profession in Michigan lost three outstanding workers.

L. Fernald Foster, M.D., died May 27, 1959, of leukemia. Dr. Foster had served the Michigan State Medical Society as Secretary for twenty-three years, able and willing to visit any part of the State where he could serve his profession best. He was one of the founders and ever present members of the Board of Directors of Michigan Medical Service, serving as its President for approximately three years. He understood doctors and their problems and always attempted to help solve them.

Ralph W. Shook, M.D., was stricken at his summer cottage near Traverse City. He died soon afterwards in the hospital on August 9, 1959. Dr. Shook was Councillor from the Fourth District and Chairman of the Finance Committee. He was a member of the Board of Trustees of Michigan Hospital Service and the Board of Directors of Michigan Medical Service. He was an alternate delegate to the American Medical Association. An enthusiastic worker, he never missed a meeting of any group, committee, board or The Council if it were at all possible to get there. He watched after the finances of the State Society and his advice on other matters was always well considered and well thought out before being offered. His death was completely unexpected by himself, his family, or his friends. He had had some difficulty but had tempered his work, taken more rest, and devoted more time to the administrative problems of the medical profession.

Grover C. Penberthy, M.D., died in his sleep on September 2, 1959. Dr. Penberthy had been President of the Michigan State Medical Society after having served on The Council and in many other capacities. He was head of the surgical department at Children's Hospital in Detroit for thirty years. He was delegate from the Section on Surgery (Abdominal) of the American Medical Association in its House of Delegates. He was active in the administration of Michigan Medical Service serving on the Board for about ten years. At the time of his death he was M.S.M.S. Chairman of the Permanent Advisory Committee on Fees to set up the fee schedule for Michigan Medical Service. Dr. Penberthy served with great distinction during both wars and in various capacities. He was surgical consultant to a corps area. In World War I he was in the personnel section of the Surgeon General. His death was completely unanticipated.

The State Medical Society and the medical pro-

fession in Michigan have lost three indefatigable, tireless workers, each of whom gave to the extent of his ability to improve the conditions of work, the ideals of the profession, and to make its services to the public always better.

NINETY-FOURTH ANNUAL SESSION

The Ninety-fourth Annual Session of the Michigan State Medical Society was held in Grand Rapids, September 27 to October 2, 1959, and included meetings of the House of Delegates, The Council, Blue Shield, and the scientific meeting.

The Council met in Lansing at 10 A.M. Sunday to conduct its regular meeting, to consider and pass upon final information, committee reports, and the supplementary report to be made to the House of Delegates. In the afternoon they adjourned to the site of the new home of Michigan State Medical Society and had an impressive ceremony of cornerstone laying, including the placing of materials in a box to be sealed in the wall. After that ceremony they drove to Grand Rapids to be ready for the House of Delegates meeting called for 8 P.M. that evening.

On Friday morning the Council met for breakfast, completed the unfinished business, heard more reports and then, as had been done for over twenty-five years, proceeded to the election and re-election of certain officers. Two new members were introduced: William A. Scott, M.D., Kalamazoo, to take the place of Ralph W. Shook, M.D., deceased, and Robert J. Mason, M.D., of Birmingham, to replace D. Bruce Wiley, M.D., who had resigned earlier to accept the Secretaryship upon the death of L. Fernald Foster, M.D. Other changes in the membership were James J. Lightbody, M.D., Detroit, who advanced from Vice Speaker to Speaker, and Harold F. Falls, M.D., Ann Arbor, who became Vice Speaker. Kenneth H. Johnson, M.D., Lansing, was chosen by the House of Delegates as President-Elect. The Council re-elected A. E. Schiller, M.D., Detroit, as Chairman, and T. P. Wickliffe, M.D., Calumet, as Vice Chairman of The Council.

Because of the increased volume of business to be conducted by The Council and to facilitate more rapid reporting and dissemination, a resolution was passed that for the next 12 months, the whole Council conduct monthly meetings, but a call also is to go out to the Executive Committee. Fifty per cent of The Council is to be considered a quorum but in case that number is not present, that a

quorum of the Executive Committee be considered a quorum for the conduct of business.

House of Delegates

The House of Delegates met in regular session on Sunday, Monday, Tuesday, Wednesday, September 27 to 30, heard and acted upon reports of the officers, of The Council and of committees, acted upon fifty-three resolutions, elected a foremost family physician, and elected new officers. At its special meeting on Wednesday morning it heard the report of the reference committee on medical service and pre-payment insurance. So much material had been referred to this committee and their hearings had occupied so many hours, that this special session was necessary. The actions of this committee will be reported with the other committee reports and transactions as soon as they are compiled.

Elections

William A. Scott, M.D., Kalamazoo, was elected as Councilor of the 4th District to replace Ralph W. Shook, M.D., deceased. B. M. Harris, M.D., Ypsilanti, was re-elected as Councilor of the 14th District. In the 15th District, D. Bruce Wiley, M.D., Utica, had resigned to become Secretary and Robert J. Mason, M.D., Birmingham, was elected to fill his vacancy. William Bromme, M.D., Detroit, was re-elected as Councilor of the 18th District.

Delegates to the American Medical Association, John S. DeTar, M.D., Milan; William A. Hyland, M.D., Grand Rapids; and Clarence I. Owen, M.D., Detroit, were re-elected. Orlen J. Johnson, M.D., Bay City, was elected as the new 7th delegate. John Wellman, M.D., Lansing; Gilbert Saltonstall, M.D., Charlevoix; W. W. Babcock, M.D., Detroit; B. M. Harris, M.D., Ypsilanti; and John R. Heidenreich, M.D., Daggett, were elected as alternate delegates to replace vacancies and give us the increased number of seven. Kenneth H. Johnson, M.D., Lansing, was made President-Elect; James J. Lightbody, M.D., Detroit, was selected as Speaker of the House of Delegates, and Harold F. Falls, M.D., Ann Arbor, was made Vice Speaker.

Michigan Medical Service

On Tuesday afternoon, September 29, 1959, members of the House of Delegates and others met as the corporate body of Michigan Medical Service. Reports were received covering the transactions for the year from G. Thomas McKean, M.D., Presi-

dent, who was selected at the June meeting to replace L. Fernald Foster, M.D., deceased. There were also reports from L. G. Goodrich, Vice-President and General Administrator, from Waldo I. Stoddard, Treasurer, and from John N. Lord, President of Michigan Hospital Service. All of this was presented in a 28-page bound volume. The election of directors resulted as follows: James B. Blodgett, M.D., Detroit, re-elected; Allan K. Cameron, M.D., Saginaw, new member; Ralph R. Cooper, M.D., Detroit, new member; John S. DeTar, M.D., Milan, a former member; James M. Gillen, public representative, Detroit, re-elected; Albert C. Kerlikowske, M.D., Ann Arbor, hospital representative, re-elected; R. L. Novy, M.D., Detroit, re-elected; John W. Rice, M.D., Jackson, new member; A. Kent Schafer, Traverse City, hospital representative, re-elected; Donald N. Sweeny, Jr., M.D., Detroit, new member; Donald W. Thorup, M.D., Benton Harbor, re-elected; and Michael C. Kozonis, M.D., Pontiac, new member. The Blue Shield Commission, through a committee, has been studying problems of Blue Shield, its organization and administration, by invitation in Michigan as it has in several other states. Three members of that study group attended the meeting of the corporation and gave a preliminary report with talks and questions. The visitors included Donald Stubbs, M.D., Washington, D. C., National President; Russell Carson, M.D., from the Florida Board; and John Castalucci, Chicago, Executive Vice-President.

Foremost Family Physician

Archer A. Claytor, M.D., Saginaw, was selected as Michigan's Foremost Family Physician. He is sixty-five years old and has practiced in Saginaw since 1936. He has been extremely active in all matters involving his profession and his community. He received many telegrams from AMA officers, President Eisenhower, and others.

General Summary

Fifteen Resolutions dealt with the MSMS and the prepayment plan concept, or more particularly, Michigan Medical Service.

After exhaustive hearings, in which ample opportunity was provided for all who wished to express themselves, the Reference Committee on Medical Service and Prepayment Insurance made its report, and its recommendations, which with minor exceptions and few amendments from the

floor, were concurred in by large majority votes, indicating a general spirit of unity.

The House approved the issuance of "income not certified" policies to all who wish to buy them; the continued sponsorship of prepaid medical care coverage by MSMS; commended the work of the MCIC; declared that the basis for service contracts should be the family income, not subscriber income and recommended lowering the present \$7,500 ceiling to \$6,500 as soon as feasible; endorsed a maximum continuous term of office for MMS Board of Directors members of six years; recommended changes in nominating procedures to MMS's Board of Directors; asked that an assignment blank be incorporated on the Doctor's Service Report form; and urged a wider dissemination of information by MMS differentiating between hospital and medical costs.

It also, at the suggestion of the Reference Committee, authorized the appointment of a House committee to work in co-operation with the advisors from the National Blue Shield Committee for Review of Michigan Medical Service Problems, and referred the 1957 Statement of Principles to that new group for review and revision.

Twenty Resolutions pertained to Administrative Changes and Statements of Policy. In approving thirteen of them the MSMS recognized the centennial celebration of the Kalamazoo State Hospital; urged that legislation be prepared that would deny subpoena power on hospital medical staff committee reports; authorized appointment of a House Committee to review the Constitution and Bylaws and report its recommendations next year; recommended improvements in adoptions procedures; urged County Medical Societies to set up civil defense training programs; advocated establishment of geriatrics chairs in the state's medical schools; approved naming of a House of Delegates Committee to study the entire problem of malpractice; and encouraged support for Michigan Health Council and other community medical career enlistment programs.

It also directed the MSMS Secretary to furnish minutes of the MSMS Council and its Executive Committee to the secretaries of the county societies, and to Delegates on their request.

In concurring in a recommendation of The Council, it provided that, upon request, a county medical society may obtain a review of its organizational and administrative practices, as well as recommendations regarding services which

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might be offered to increase local public relations potential. The evaluating team would consist of experienced county and state society officers, plus lay experts.

The problem of aging was invited to the attention of the Michigan Association of the Professions and the Michigan Hospital Council by a Resolution recommending discussions leading to the lowering of professional fees for services rendered to the "over-65" persons.

Eighteen Resolutions were introduced which proposed changes in the MSMS Constitution and By-laws. Nearly half of them were of such a nature that the House directed their referral to study committees from which it hoped to obtain more information before taking action.

The House did approve some changes. The delinquency date for dues was changed from April 1 to May 15, and there was set up a reduced schedule of dues for new physicians, who would be liable for one-third of the MSMS dues in their first year and one-half in the second.

Also, the MSMS Cancer Control Committee was eliminated and the name of the MSMS Legislative Committee was changed to the Legal Affairs Committee. Incorrect references in the by-laws to the terms "meeting" and "session" were eliminated and the phrase "disciplinary measures" was changed to "investigative procedures" in Chapters 6 and 7. In view of the fact that MSMS is now entitled to seven Delegates to the AMA, instead of six, provision was made so that four Delegates could be elected in one year, instead of the present limit of three. Membership on the Ethics Committee was reduced from eight to five.

Referred to special Committees for study were proposals for election by the House of the MSMS Secretary, Treasurer and Editor, rather than by The Council as at present.

BLUE SHIELD—THE "PATIENT'S PLAN"

We often refer to our medically-sponsored Blue Shield Plan as the "Doctors' Plan." And this is entirely meet and proper if we think of ourselves, not as the owners or principal beneficiaries of Blue Shield, but as its trustee—responsible for providing its promised benefits to our patients.

For just as our profession achieves its power and its glory through service to humanity, so, too, the one and only mission of Blue Shield is to serve

the economic needs of our patients. It's the subscriber who "pays the piper"—and it's he, ultimately, who "calls the tune."

We American physicians are uniquely privileged by the tremendous acceptance that the people have accorded our doctor-sponsored prepayment program. In supporting Blue Shield, more than forty million of our fellow-citizens have cast their lot with us, endorsing our traditional pattern of medical practice, and rejecting—at least *pro tem*—the alien forms under which most of our colleagues abroad are compelled to serve.

But the people have not only *accepted* Blue Shield; they are *demanding* an ever better and broader prepayment program. We have not only "sold" them Blue Shield, but we've sold them a confident expectation that we can and will eventually provide *all* the benefits of modern medicine through a prepayment program.

Whether the people of the U.S.A. achieve this ultimate goal through a prepayment program shaped and guided by our profession is a question that challenges the leadership of American medicine today and tomorrow.

PULMONARY DISEASE

(Continued from Page 1831)

atypical irregular hyperchromatic cells (Fig. 18, Case 6). There was evidence of ulceration and necrosis. The lymph nodes were not involved.

This case emphasizes the value of the established practice of bronchoscopic as well as bronchographic examination of patients suspected of having bronchiectasis.

The above representative cases clearly demonstrate that a patient may be subjected to x-ray examination, skin testing, bronchoscopic examination, bronchographic examination, scalene node biopsy, and bacteriological and cytological examination in order to diagnose a thoracic lesion and yet no definite diagnosis is established. An exploratory thoracotomy as a diagnostic procedure is then indicated. An increasing number of patients are now subjected to this procedure. With the increased use of mass radiography, more chest lesions are being brought to the attention of the thoracic surgeon. The risk of a thoracotomy is far less than the risk of leaving undiagnosed a lesion in the chest which may be resected with a good prognosis. Therefore, this procedure should not be denied any patient if every other attempt at diagnosis has been exhausted and no definite diagnosis established.



Saginaw delegates and county medical society president admire Doctor Claytor's Foremost Family Physician Award following the formal presentation by the House of Delegates in Grand Rapids. Around Dr. Claytor are Joseph P. Markey, M.D., seated left; Donald Sargeant, M.D., county president, seated right; A. C. Stander, M.D., standing left, and Vernon V. Bass, M.D., standing right.

Honor Saginaw Man "Foremost Family Physician"

"I didn't think it could happen to a member of my group, and since it did happen, it would only be in America."

That observation was made by Archer A. Claytor, M.D., of Saginaw, as he received the scroll as "Michigan's Foremost Family Physician" at the MSMS 1959 annual session at Grand Rapids.

Dr. Claytor, a family physician at Saginaw for the past twenty-three years and a community leader, received the scroll from Kenneth H. Johnson, M.D., Lansing, speaker of the Michigan State Medical Society House of Delegates.

The delegates had elected Dr. Claytor to the honor. After many county medical societies nominated members for the honor and a state committee narrowed the field to three. Dr. Claytor was nominated by the Saginaw County Medical Society.

In receiving the honor for 1959-1960, Dr. Claytor admitted that it was a surprise to him—and that it could have happened "only in America."

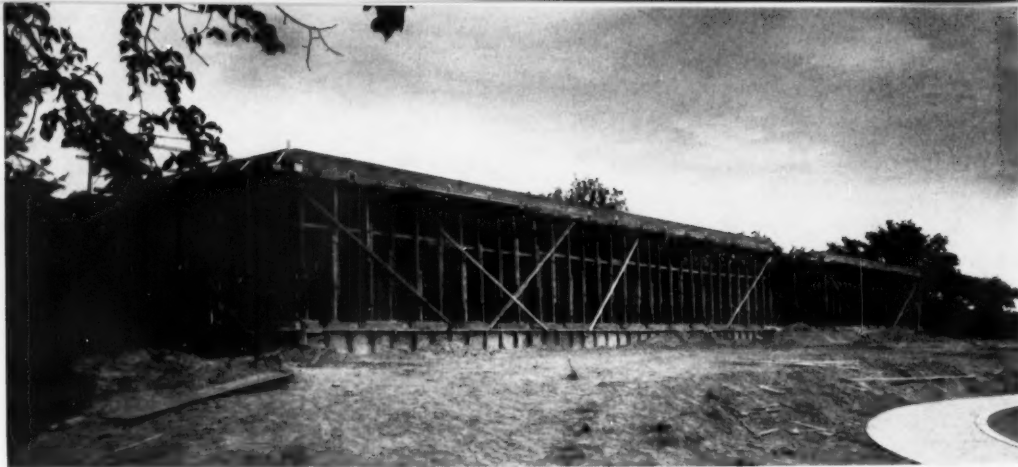
Born of slave parents in Virginia, Dr. Claytor was the eleventh of thirteen children. All thirteen children were graduated from high school and taught public school. One brother, now dead, went on to become a dentist.

Present to watch the ceremonies were his wife Marie, and a brother, Robert W. Claytor, M.D., who practices in Grand Rapids. The Claytors have two daughters, Elinor, eighteen, a freshman art student at Michigan State University, and Carol Ann, sixteen.

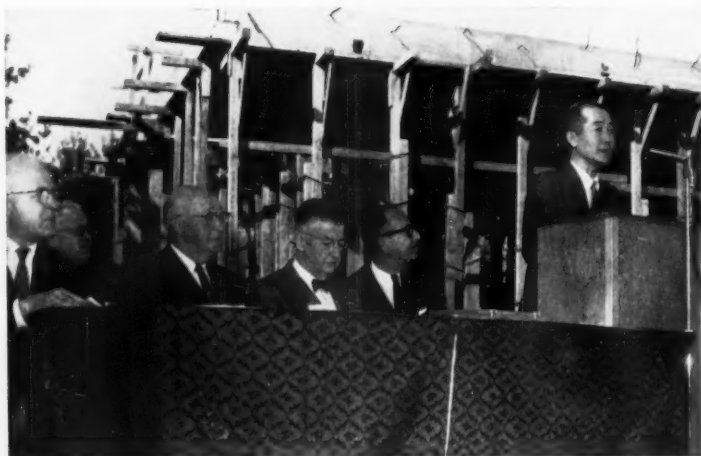
Dr. Claytor is a recognized leader at Saginaw—as a past president of the Saginaw First Ward Community Center, a member of the Saginaw Housing Commission, director of the Saginaw Community Chest, and the recipient of a citation from the American Legion.

Last year, he was appointed by President Eisenhower to a six-year term as a member of the governing board of the Virgin Islands.

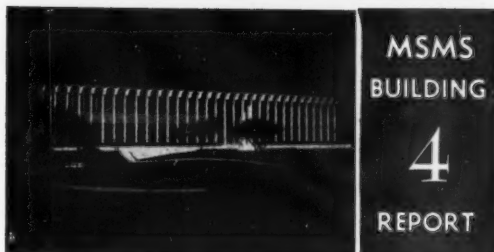
He has been nominated now by MSMS for the AMA. "Practitioner of the Year" award.



MSMS memorabilia is sealed into the cornerstone by President Saltonstall assisted by President-elect Darling (left) and Council Chairman Schiller.



Principal speaker at the MSMS cornerstone-laying event was Minoru Yamasaki, the architect for the new headquarters. Shown seated from left to right are program participants, Secretary D. Bruce Wiley, M.D.; R. W. Teed, M.D.; Council Chairman A. E. Schiller, M.D.; President-elect Milton A. Darling, M.D.; and President G. B. Saltonstall, M.D.



Monthly Building Report Features Ground Breaking Ceremony . . .



"A Doctor's Prayer" was read during the cornerstone ceremony by its author, R. Wallace Teed, M.D., Ann Arbor, as MSMS officers seal the marble slab into place.

In formal ceremonies on a sunny Autumn day, the cornerstone of the new MSMS headquarters in East Lansing was installed by officers and councilors.

Presiding at the ceremony was Council Chairman A. E. Schiller, M.D. The event, Sunday, September 27, was attended by more than 150 doctors and their wives.

Principal speaker during the brief ceremony was the building's architect, Minoru Yamasaki, of Birmingham, who discussed his philosophy of architecture.

In the cornerstone cavity was placed historical and contemporary documents of the Michigan State Medical Society. In addition many prominent citizens of Michigan had been invited to make their predictions as to the state of health and medicine in the year 2,000 A.D. The prognostications were sealed in the cornerstone to be opened forty years hence.

The cornerstone memorabilia were placed in a lead container by President G. B. Saltonstall, M.D., President-Elect M. A. Darling, M.D., and Secretary D. Bruce Wiley, M.D. The container was then sealed into a cavity behind a slab of white marble inscribed with the numerals, 1959.

Concluding the ceremony was the reading of "A Doctor's Prayer" written especially for the occasion by R. Wallace Teed, M.D., of Ann Arbor: "Loving Father of all, we thank Thee for the gift of Thy Son, Jesus Christ, who came to this Earth to give Himself a ransom for many, and to demonstrate Thy love in His life and in His healing ministry, and for the example that He gave to physicians in caring for those who have been afflicted by disease or injury.

"Grant that as physicians we may dedicate our lives to the ideal of service to others, as He did, allowing nothing to demean that ideal.

"Give us love for Thee and for our fellowman, so that our service will be motivated by Thee, and come from the heart.

"Give us knowledge of our world, and of Thee, the source of all Truth, and lead us into that wisdom which comes from Thee alone. Keep us mindful of our deficiencies, and of our need of daily guidance by Thine unerring Hand.

"Guide our steps in the way of Truth, and bring us at last into Thine eternal Home. Amen."

Place Predictions for 2,000 A.D. in Cornerstone

What will be the health of the nation in year 2,000 A.D.?

An insight into the possibilities was given at the cornerstone ceremonies for the new Michigan State Medical Society headquarters in East Lansing.

At the ceremonies of "Predictions about medicine and health in 2,000 A.D." were placed in the cornerstone. The prognostications will be opened in 40 years.

The predictions concerned such subjects as the older age group, major diseases of today, changes in hospital care, mental health and others.

"In the year 2,000, the birth-bulge of the 1940's will just be moving into the older-age group to present a critical health problem," predicted W. N. Hubbard, Jr., Dean, University of Michigan Medical School.

Dean Hubbard also commented that "I would predict that the complexities of accurate diagnosis and specific therapy in the year 2,000 will have resulted in an ever-increasing specialization in Medicine."

The president of the Michigan State Medical Society, G. B. Saltonstall, M.D., of Charlevoix, prophesied that "by the year 2,000, the average life span will have increased to 85 years for men and 90 years for women." He also suggested that "rheumatic fever and rheumatic heart disease will be prevented by an anti-toxin pill given as part of the antibiotic therapy of streptococcal infections."

Many improvements in public health and medicine are foreseen by A. E. Heustis, M.D., State Health Commissioner. He said, "Synthetic foods will have helped quiet the cry of hungry babies in half the world, sanitation will have rolled back the fevers of environmental disease, fluoridation of all public water supplies will have reduced tooth decay by two-thirds, and new medicines will have been found to prevent or cure one-time major ailments such as tuberculosis and cancer."

"Hospitals will be automated," wrote A. Kent Schafer, of Traverse City, president of the Michigan Hospital Association. He said, "For example, hospital central kitchens will be eliminated. All dietary requirements will be radiologically preserved and will be reconstituted at the bedside, electronically, and on demand."

"Cancer, as a dreaded disease, will have been eliminated." That contention was made by William M. LeFevre, M.D., Muskegon physician who is president of the Michigan Association of the Professions. He also predicted that the human race will be menaced by several diseases which at present are unknown.

Governor G. Mennen Williams, in his predictions, wrote, "In the year 2,000 there will be no reason, indeed no excuse, for substandard living and health conditions." He also commented that "We will be training hundreds of additional doctors, specialists, nurses and technicians each year and will undoubtedly be considering the establishment of a fourth Michigan medical school long before the year 2000."

In the predictions of John A. Hannah, president of Michigan State University, he noted that "We will have made so much progress in eliminating bad housing and unsanitary living conditions that these will no longer be influential health factors."

Robert D. Swanson, president of Alma College, wrote, "If we continue at our present rate, the chief problem which the medical profession will face in 2,000 will be that of sustaining human health in the face of a heavily-saturated radioactive world."

Raymond H. Dresser, of Sturgis, president of the State Bar of Michigan, sees ahead—"Large community health centers will be created, with clinic-type medicine in conjunction with such hospital medical centers."

Concern about the women was voiced by Audrey K. Wilder, of Albion, president of the Michigan division of the American Association of University Women. "Even now, the life pattern of women is changing, early marriage and child-bearing plus the increasing needs of society will put women back into the labor field in their late thirties and forties, with an accompanying improvement in their physical and mental health."

Fear is expressed about future problems by Don R. Pears, of Buchanan, Speaker of the Michigan House of Representatives. "An ever-expanding industrialized civilization will result in an increase in respiratory diseases, and the disposal of atomic wastes also will present an acute medical problem."

Obstetrical Brevits

The Antepartum and Intrapartum Use of Pituitary-like Preparations

The use of Pituitrin, or one of its substitutes with similar oxytocic action, before the end of the second stage of labor, has become so widespread that the propriety of its utilization under such circumstances has been questioned. To induce labor at a time which is convenient to the patient and unlikely to interfere with the physician's routine, and to accelerate a slow, indolent labor are so attractive that it is not surprising that its use for such purposes has become more and more prevalent.

In the Michigan Maternal Mortality Study there have been found a number of maternal deaths that occurred after the use of pituitary-like substances to either induce or stimulate uterine contractions. In these cases, death was caused by rupture of the uterus, by uncontrollable postpartum hemorrhage, or premature separation of the placenta. The effects of such practices on the infant are less tangible and involve such factors as perinatal mortality, cerebral palsy and mental retardation. In a recent review of 6,860 electively induced labors Keettel, Randall and Donnelly concluded that one in every two hundred perinatal deaths could be traced directly to the induction; the principal factors being: (a) prematurity 3.1 per cent; (b) prolonged latent period 5.0 per cent; (c) malpresentation 0.9 per cent; and (d) prolapsed cord 0.3 per cent. In their series there were thirty-five breech

presentations and twenty-nine twin pregnancies which were unrecognized. Many authorities feel that labor should be induced only for medical or obstetrical indications.

Even the more avid enthusiasts for the antepartum and intrapartum use of these oxytocics emphasize the importance of rigid observance of certain contraindications, namely:

1. Prematurity.
2. Dilatation of the cervix less than 2 cms.
3. Effacement of the cervix less than 50 per cent.
4. Dysproportion.
5. Malposition, including breech presentation.
6. Engagement incomplete.
7. Four or more previous pregnancies.
8. Previous cesarean section.
9. Deep cervical lacerations.
10. Hydrocephalus or fetal tumors.

They also insist on continuous observation by a physician with a general anesthetic, narcotic and oxygen in readiness.

These criteria can be complied with in a relatively few large urban hospitals, staffed by obstetrical specialists. In the average smaller hospital without internes or residents the practice must usually be considered ill advised.

BABIES BORN IN HOSPITALS

Twenty years ago less than 40 per cent of all babies born in this country were delivered in hospitals. Now, with infant and maternal mortality at all-time lows, the figure is about 95 per cent. Obstetrical cases had

little effect on the increase in total days of care, though, since average length of stay per patient dropped from 10.1 to 4.4 days.

Michigan's Department of Health

Albert E. Heustis, M.D., State Health Commissioner

GAMMA GLOBULIN SUPPLIES INCREASED

The enlarged blood fractionation program of the Michigan Department of Health is now operating at full capacity in the new facility. As a result, larger supplies of immune serum globulin are now available to physicians, health officers, and hospitals. Immune serum globulin is available through full-time health departments, the Michigan Department of Health at Lansing or the branch laboratories of the department at Grand Rapids, Powers, and Houghton, for the following purposes:

A. Measles

- (1) Immune serum globulin is available for the modification or passive prevention of measles in children who are contacts of known cases of measles. Generally modification is to be preferred to passive prevention.
- (2) The dose for modification is 0.02 cc. per pound body weight five to six days after exposure.
- (3) The dose for prevention is 0.1 cc. per pound body weight as soon after exposure as possible.
- (4) Immune serum globulin is not available for treatment.

B. Infectious Hepatitis

- (1) Immune serum globulin is available only for household contacts of cases of infectious hepatitis.
- (2) The prophylactic dose is 0.02 cc. per pound body weight and should be given to all household contacts as soon as possible after a case occurs in a household.
- (3) Immune serum globulin is not available for treatment.

C. Rubella—Pregnant Women

- (1) Immune serum globulin is available for pregnant women exposed to rubella only if the exposure occurs during the first four months of pregnancy.
- (2) The dose is 20 cc. as soon after exposure as possible.

D. Hypogammaglobulinemia

- (1) Immune serum globulin is available for cases of hypogammaglobulinemia only if the diagnosis has been confirmed by electrophoretic analysis.
- (2) The maintenance dose varies according to the extent of the deficiency and must be determined for each individual.

E. Poliomyelitis

- (1) Immune serum globulin is of no value in and, therefore, is not available for contacts of poliomyelitis.

It is still necessary to obtain a report of a case of infectious hepatitis before releasing immune serum globulin for the household contacts. It is no longer necessary to keep a record of the contacts either to cases of infectious hepatitis or measles.

TPCF OUT: RPCF IN

Beginning on October 1, the Michigan Department of Health discontinued Treponema Pallidum Complement Fixation testing and began routinely making Reiter Protein Complement Fixation tests on all reactive Kahn specimens. Formerly, the TPCF tests were made only at the request of the private physician.

"The RPCF test is a comparatively recent development in the serodiagnosis of syphilis. Evaluations by reference laboratories as well as the department laboratories, indicate that it has a far greater degree of specificity than standard reagin serologic tests. The RPCF test uses the protein fraction of Reiter's organism and presumably is free of the lipid antigen which reacts with reagin. With the better tools now available, it is easier to separate those who are true biologic false positives from those who are actually syphilitic.

The change to routine RPCF testing of all reactive Kahns will mean (1) that results will be available sooner because specimens will not be accumulated until a large number can be run at once, as with TPCF; (2) that a better diagnosis will be made, since the RPCF is more specific than the TPCF; and (3) that this service will be less costly to the state.

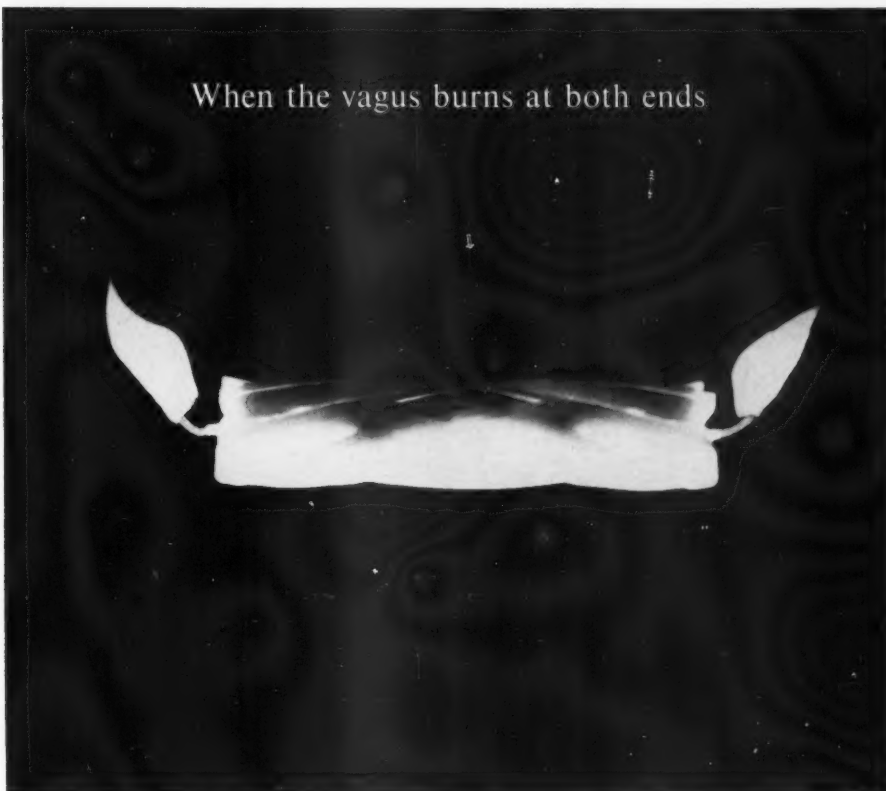
In conjunction with this change, the State Health Commissioner declared on September 23, 1959, that in accordance with Acts 207, P.A. 1937, and 106, P.A. 1939, the Reiter Protein Complement Fixation test be added to the approved standard serologic tests for syphilis. This test is in addition to the Hinton, Kahn, Kline, Kolmer, Mazzini, Treponema Pallidum Complement Fixation, and the VDRL, as standard serologic tests for syphilis.

The RPCF tests, for the present at least, will be made only at the Lansing and Grand Rapids Laboratories of the Michigan Department of Health.

DOES RIGID CONTROL OF THE BLOOD SUGAR PREVENT THE CARDIOVASCULAR COMPLICATIONS OF DIABETES?

To determine the effect on vascular disease of good or poor control of diabetes, it is necessary that a large number of patients be studied by the same observers. Dr. Ricketts cites the results reported by the Joslin group on 189 patients wherein 76 per cent of the cases under good control exhibited no or slight retinopathy, and 67 per cent of the patients under poor control showed moderate, marked, or extreme retinopathy.—HENRY T. RICKETTS, M.D., *Illinois Medical Journal*, May, 1959.

When the vagus burns at both ends



Pro-Banthine® with Dartal® moderates both mood and gastrointestinal spasm

The slow simmer of anxiety frequently causes kindred gastrointestinal overactivity. The spasticity and the accompanying distress of excess acid lead to loss of efficiency. Patients subject to such psychoenteric upsets require therapy to calm both ends of the vagus.

Pro-Banthine with Dartal contains two agents required for such dual therapy: Pro-Banthine to control and curtail the flare-ups of spasm, excess acidity and excess motility,

and Dartal to smother simmering anxiety and tension.

Pro-Banthine with Dartal contains 15 mg. of Pro-Banthine (brand of propantheline bromide) and 5 mg. of Dartal (brand of thiopropazate dihydrochloride) in each tablet.

Dosage: One tablet three times a day.

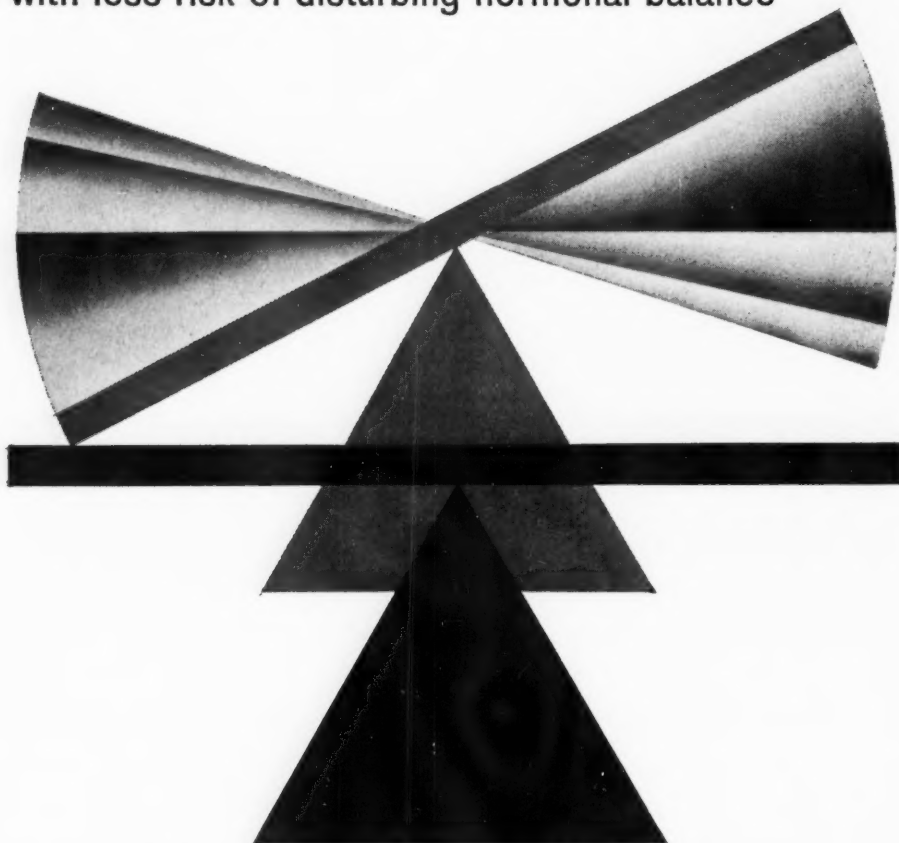
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Research in the Service of Medicine.

Effective relief in rheumatic disorders

Sterazolidin[®] capsules
prednisone-phenylbutazone Geigy

Geigy

with less risk of disturbing hormonal balance



In the treatment of the rheumatic disorders new Sterazolidin provides a method of limiting the gravest danger inherent in steroid therapy... hypercortisonism arising from excessive dosage.

Repeatedly it has been shown that the addition of low dosage of Butazolidin sharply reduces hormone requirement.¹⁻⁴ Sterazolidin is a combination of prednisone (1.25 mg.) and Butazolidin (50 mg.) which provides, in the majority of cases, consistent relief at a stable uniform maintenance dosage significantly below the level at which serious hormonal imbalance is likely to occur.

Sterazolidin[®] (prednisone-phenylbutazone Geigy). Each capsule contains prednisone 1.25 mg.; phenylbutazone 50 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg. and homatropine methylbromide 1.25 mg.

1. Kuzell, W. C., and others.: Arch. Int. Med. 92:646, 1953. 2. Wolfson, W. Q.: J. Michigan M. Soc. 54:323, 1955. 3. Strandberg, B.: Brit. J. Phys. Med. 19:9, 1956. 4. Platt, W. D., Jr., and Steinberg, I. H.: New England J. Med. 256:823 (May 2) 1957.

Geigy, Ardsley, New York

**buoy up
your patients
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**in pregnancy
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convalescence
deficiency states
dietary restrictions
digestive dysfunction**

with

Saturation Dosage
of water-soluble vitamins B and C

ALLBEE[®] with C



Each capsule contains:

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|---------------------------------|---------|
| Thiamine | |
| Mononitrate (B ₁) | 15 mg. |
| Riboflavin (B ₂) | 10 mg. |
| Nicotinamide | 50 mg. |
| Calcium Pantothenate | 10 mg. |
| Pyridoxine | |
| Hydrochloride (B ₆) | 5 mg. |
| Ascorbic Acid | |
| (vitamin C) | 250 mg. |

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rock-bottom economy for peak-high vitamin values for your patients

relieve the tension—and control its G.I. sequelae



...Pathibamate®

meprobamate with PATHILON® tridihexethyl chloride Lederle

*for relieving tension and curbing hypermotility
and excessive secretion in G. I. disorders*

PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

meprobamate (400 mg. or 200 mg.)—a tranquilizer and muscle-relaxant widely accepted for the effective management of tension and anxiety

PATHILON (25 mg.)—an anticholinergic long noted for producing prompt symptomatic relief through peripheral, atropine-like action, yet with few side effects

now available...

PATHIBAMATE-200 Tablets

200 mg. meprobamate • 25 mg. PATHILON

*for more flexible control of G. I. trauma and tension
smooth, sugar-coated, easy-to-swallow*

PATHIBAMATE-400 and PATHIBAMATE-200 are indicated for duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Supplied: PATHIBAMATE-400—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride 25 mg.

PATHIBAMATE-200—Each tablet (yellow, coated) contains meprobamate, 200 mg.; PATHILON tridihexethyl chloride, 25 mg.

Administration and Dosage: PATHIBAMATE-400—1 tablet three times a day at mealtime and 2 tablets at bedtime.

PATHIBAMATE-200—1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.

Adjust dosage to patient response.

Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.



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control of
salt retention
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(Brand of Mercumatiln, Endo)

Tablets

- effective oral diuretic with no significant gastrointestinal irritation¹
- Suitable for long-term maintenance therapy.
- eliminates need for injections in certain cases, lengthens interval between injections in others
- basically different in chemical structure, extending the therapeutic choice in organic mercurials

DOSAGE: 1 to 3 tablets daily as required.

SUPPLIED: As orange tablets, in bottles of 100 and 1000. Also available—

CUMERTILIN Sodium Injection, 1- and 2-cc. ampuls, in boxes of 12, 25, and 100; and 10-cc. vials, individually and in boxes of 10 and 100

¹ Pollock, B. E., and Pruitt, F. W.: *Am. J. M. Sc.*, 226:172, 1953.

THE G. A. INGRAM COMPANY
4444 Woodward Avenue, Detroit 1, Mich.

In Memoriam

SYDNEY K. BEIGLER, M.D., fifty-eight, Detroit surgeon, died September 5, 1959. Doctor Beigler, a native of Detroit, was a graduate of the University of Michigan Medical School and served his internship at the University of Wisconsin Hospital. He was on the surgical staff of Harper and Sinai hospitals.

WILLIAM L. BETTISON, M.D., sixty-three, Grand Rapids practitioner of internal medicine, died September 19, 1959. Born at Ishpeming, Doctor Bettison received his medical degree in 1922, at the University of Michigan and then specialized in internal medicine in four years of post-graduate work there and later at Harvard medical school. He was a staff member of Blodgett and St. Mary's hospitals. Doctor Bettison was a member of Fountain Street Baptist Church, the Grand Rapids Rotary and the York Lodge No. 410, F & AM.



MAX R. BURNELL, M.D., sixty-five, Flint, retired Medical Director of General Motors, died September 20, 1959. Born at Metamora, Doctor Burnell's family moved to Flint when he was a child. After attending Flint high school and Albion college, he graduated in 1918 from the University of Michigan School of Medicine.

He taught at the Long Island College Hospital, returning to Flint in 1921 to enter private practice in Obstetrics and Gynecology. Doctor Burnell was guided into industrial medicine by his friend, Harlow W. Curtice, who in 1931, as general manager of the A. C. Spark Plug Division, hired Doctor Burnell to organize a medical department for that division. In 1949, Doctor Burnell was appointed G.M.'s medical director, succeeding Dr. Clarence D. Selby, Port Huron. Doctor Burnell retired in 1958, after twenty-eight years of service to G.M.

He was the last of the three original members of the medical advisory committee of the Clara Elizabeth Fund for Maternal Health. In 1952, he received the William S. Knudson award for outstanding contributions to Industrial Medicine.

Doctor Burnell had served on the Executive Committee of the Medical Staff of Hurley Hospital and was a past chief of the medical staff of McLaren General Hospital. He was a member of Sigma Chi and Nu Sigma Nu Fraternities, Flint City Club, Flint Golf Club, Flint Rotary Club, Detroit Club and the Recess Club of Detroit. Doctor Burnell was a long time chairman of the MSMS committee on Occupational Health.

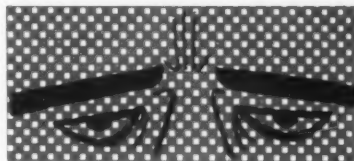
MILTON DOUGLAS COMFORT, M.D., fifty-four, Flat Rock doctor for thirty years, died in Wyandotte General Hospital, the morning of September 8 from in-

(Continued on Page 1872)

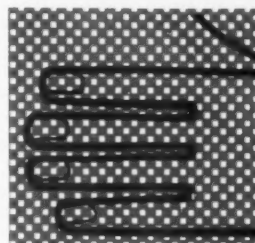
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EXCEDRIN*

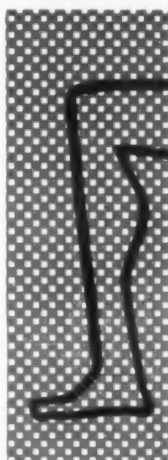
FOR MIDDLE- GRADE PAIN



HEADACHE



ARTHRITIS



MUSCLE STRAINS



DYSMENORRHEA

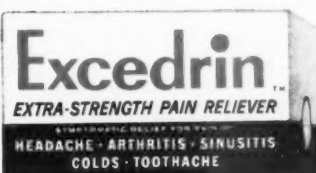


SINUSITIS



*Trade-mark

When "a couple of aspirins" isn't enough, and a narcotic is unwarranted.



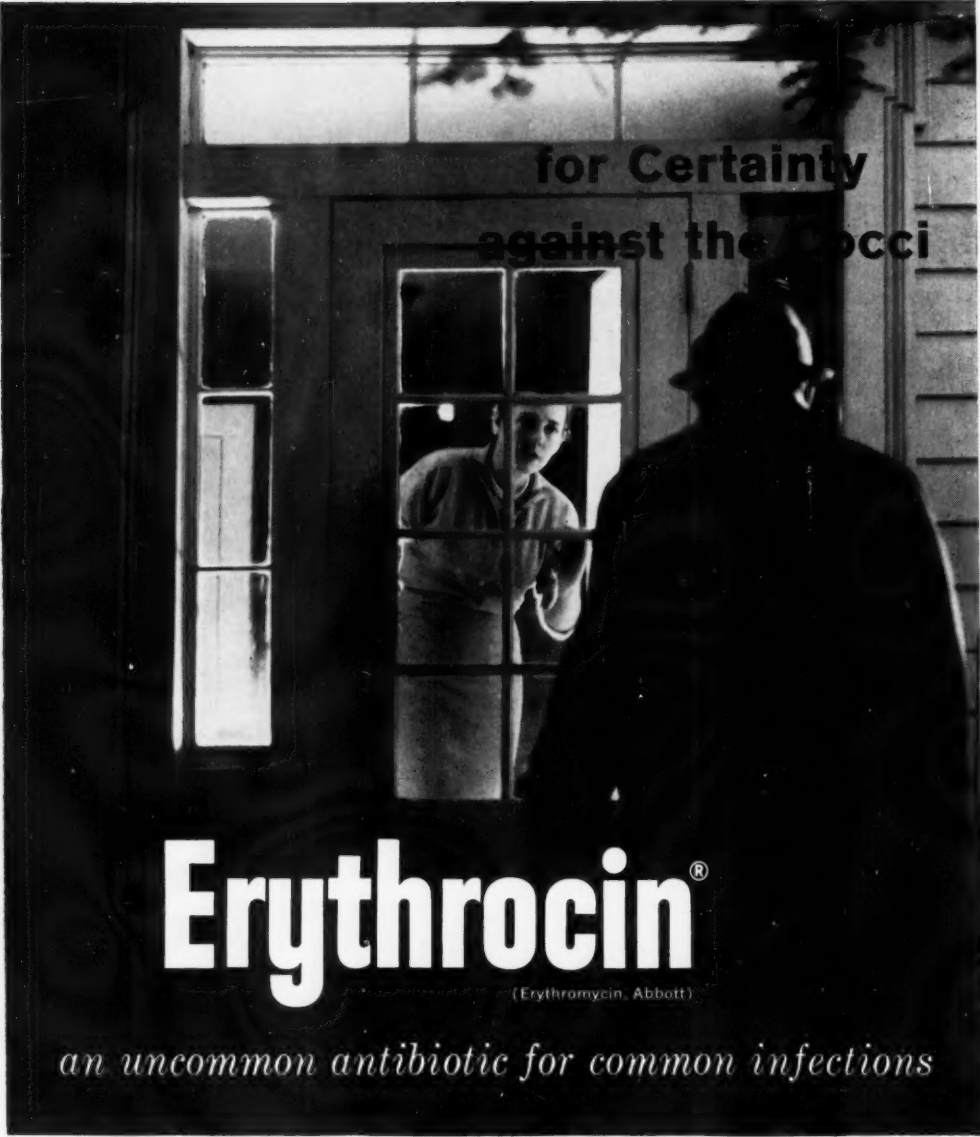
Extra-strength formula — 2 tablets of non-narcotic EXCEDRIN contains the total relief-giving ingredients of 3 ordinary pain-relieving tablets. In addition, the extra caffeine content provides increased cerebral stimulation. Each EXCEDRIN tablet supplies:

Salicylamide 2 grs. Aspirin 2 1/4 grs.
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Indications: For analgesic and anti-inflammatory benefits in: muscle-connective tissue strain, headache, sinus congestion, severe colds and dysmenorrhea; and for temporary relief of minor arthritic pain.

Dosage: EXCEDRIN is taken in normal dosage: 2 tablets every 4 hours, or as needed.

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against the Cocci

Erythrocin[®]

(Erythromycin, Abbott)

an uncommon antibiotic for common infections

Provides fast, high blood and tissue concentrations—plus an unparalleled safety record. Erythrocin is available in easy-to-swallow Filmtabs[®] (100 and 250 mg.); in tasty, citrus-flavored Oral Suspension (200 mg. per 5-cc. teaspoonful); and for intravenous and intramuscular use.



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BCS:32

1868

Say you saw it in the Journal of the Michigan State Medical Society

JMSMS

internal and/or external attack

Whatever the bacterial infection seen in EENT, the foci respond rapidly to a suitable form of broad-spectrum ACHROMYCIN. In superficial cases, local therapy is often dramatic. In deep-seated conditions, ACHROMYCIN V capsules complement topical control for fast relief and remission.

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Tetracycline Lederle



e Ophthalmic Oil Suspension 1%
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Ophthalmic Ointment 1%
with Hydrocortisone 1.5%
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n Nasal Suspension
with Hydrocortisone
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ACHROMYCIN V (Tetracycline with Citric Acid) Capsules

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



NOVEMBER, 1959

Say you saw it in the Journal of the Michigan State Medical Society

1869

WITHOUT STEROIDS

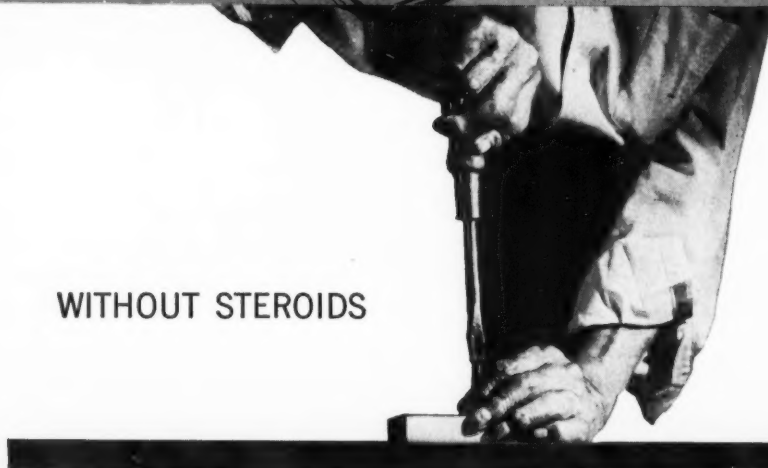


In every arthritic state...

WITHOUT STEROIDS



WITHOUT STEROIDS



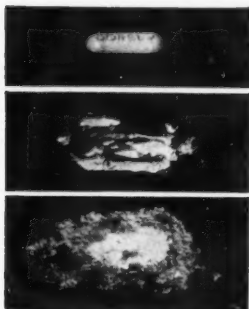
MAINTENANCE THERAPY WITHOUT STEROIDS IS FUNDAMENTAL

Sound, conservative therapy with salicylates has been consistently reaffirmed as basic, long-term maintenance therapy in the arthritides.

Buffered Pabirin provides superior maintenance therapy. It epitomizes fundamental long-term basic therapy since it can be given month after month without serious complications and with minimal problems to patient and doctor alike.

Buffered Pabirin is formulated to provide high and sustained salicylate blood levels. Each tablet consists of an outer layer containing a buffer (aluminum hydroxide), para-aminobenzoic acid, and ascorbic acid; a core of acetylsalicylic acid.

In the stomach, the outer layer quickly releases the buffer, which protects against nausea, dyspepsia and other gastrointestinal symptoms so frequently encountered with salicylates alone. The core of Buffered Pabirin then disintegrates rapidly, permitting rapid absorption of the acetylsalicylic acid for faster pain relief.



Photographs show 2-stage
Tandem Release disintegration.

Each tablet contains:

Acetylsalicylic acid (5 gr.).....300 mg.
Para-aminobenzoic acid (5 gr.)....300 mg.
Ascorbic acid 50 mg.
Dried aluminum hydroxide gel....100 mg.

All Buffered Pabirin is sodium- and potassium-free.

Dosage: Two or three tablets
3 or 4 times daily.

References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. 257:278 (Aug.) 1957.

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IN MEMORIAM

New!

BAND-AID TRADE MARK Plastic Strips



- ELASTIC PLASTIC
- FLESH COLORED
- STAYS CLEAN
- THIN, SMOOTH PLASTIC
- GREASE RESISTANT
- WON'T WASH OFF

100's 1" x 3"
100's 3/4" x 3"

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Grand Rapids, Michigan

MILTON DOUGLAS COMFORT

(Continued from Page 1866)

juries received in a car-truck crash on U.S. 24. Born in Middlesex County, Ontario, he attended Canadian schools and was graduated from the University of Ontario, London, in 1928. His internship was at Harper Hospital, Detroit. Doctor Comfort was a member of the Flat Rock Rotary Club, the Elks, the Masonic Lodge, the Alpha Kappa Medical Fraternity and the Flat Rock Methodist Church.

BERNARD HAMLIN GLENN, M.D., seventy-seven, Fowlerville physician, died September 21, 1959.

A lifetime resident of Livingston County, Doctor Glenn attended Pinckney High School. In 1908, he received his medical degree from the University of Michigan and served his internship at Pinckney Sanatorium. A residency was taken at the Michigan State Tuberculosis Sanatorium at Howell after which, in 1909, Doctor Glenn began his fifty years of active practice in Fowlerville.

Active in Livingston County Medical Society affairs, he was president in 1936. In 1958 Doctor Glenn received the Fifty Year Award from the Michigan State Medical Society. Doctor Glenn was a life member of Fowlerville F. & A.M., and the Detroit Sovereign Consistory, a member of the Fowlerville Commercial Club and the Presbyterian Church of Howell.

WILLIAM BOYD HORNSBY, M.D., seventy-four, Clinton physician, died September 9, 1959.

Doctor Hornsby was born at Laurel Creek, Kentucky, the son of a doctor. He attended rural schools at Burning Springs, Kentucky, graduating from Oneita Baptist Inst. in 1901. He attended Berea College, before entering the University of Louisville, where he graduated in 1911, as a doctor of medicine. He had practiced in Clinton for thirty-six years and was on the medical staff at Herrick Hospital, Tecumseh, Michigan.

M. S. MARTZOWKA, M.D., fifty-six, Roscommon, died September 5, 1959. Born and raised in Saginaw, Doctor Martzowka was graduated in 1931 from the University of Michigan Medical School. He moved to Roscommon in 1932, after completing his internship at Mercy Hospital in Bay City. He was a former chief of staff of the Grayling Mercy Hospital.

Doctor Martzowka was active in community affairs, had been a member of Gerrish-Higgins high school board of education for twelve years, and was president of the board at the time of his death. He was a charter member and past president of the Rotary Club of Roscommon, a member of the Masonic Lodge 579 at Houghton Lake and a member of the Congregational Church in Roscommon.

EMIL V. MAYER, M.D., seventy-two, Detroit physician, died September 16, 1959. Formerly a Chicagoan, Doctor Mayer was graduated from Loyola University of

(Continued on Page 1874)

Now — All cold symptoms
can be controlled



Tussagesic

timed-release tablets

Controls congestion
with Triaminic,^{1,2,3} the leading oral
nasal decongestant.

Controls aches and fever
with well-tolerated APAP, non-addic-
tive analgesic⁴ and excellent antipyretic.⁵

Each TUSSAGESIC Tablet provides:

TRIAMINIC® 50 mg.
(phenylpropanolamine HCl 25 mg.
pheniramine maleate 12.5 mg.
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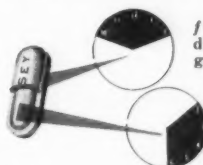
Dormethan
(brand of dextromethorphan HBr) 30 mg.
Terpin hydrate 180 mg.
APAP (N-acetyl-p-aminophenol) 325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
with non-narcotic Dormethan, possess-
ing "amply demonstrated" antitussive
activity,⁶ as effective as codeine.

Liquefies tenacious mucus
with terpin hydrate, classic expectorant.

*Prompt and prolonged relief because of
this special "timed release" design:*



*first — the outer layer
dissolves within minutes to
give 3 to 4 hours of relief*

*then — the inner core
releases its ingredients
to sustain relief for 3 to
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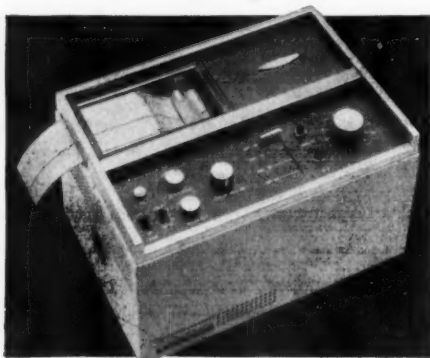
Dosage: One tablet in the morning, midafternoon
and at bedtime. Pediatric dosage chart for
Tussagesic Suspension available on request.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it
especially attractive to children and other patients who prefer liquid medication.

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EMIL V. MAYER

(Continued from Page 1872)

Chicago. He was an officer in the Medical Corps in World War I. Doctor Mayer was on the staff of Highland Park General and Mt. Carmel Mercy hospitals, was medical director of the Fr. Cotter Counsel No. 1874 Knights of Columbus, a member of the Knights of Equity and of the Holy Name Society of Gesu Church.

JAMES A. MORTON, M.D., forty-two, of Birmingham, died September 16, 1959. Doctor Morton was a graduate of Williams College and the University of Michigan Medical School and served his residency in radiology at the University of Wisconsin. He was on the staff of St. Joseph Mercy Hospital, Pontiac.

CLARENCE V. SMITH, M.D., sixty-nine, of Detroit, died September 18, 1959. Born in Bradfield, Illinois, he was a 1910 graduate of the University of Illinois Medical School and was on the staffs of Saratoga and Holy Cross hospitals.

FRANK A. WEISER, M.D., sixty-four, of Detroit, died September 9, 1959. A native of Ohio, Doctor Weiser attended the University of Michigan and then Wayne State University School of Medicine from which he graduated in 1920. He was on the staffs of Grace, Receiving and Wayne County General Hospital and was an associate professor of medicine at Wayne State University and was a former Editor of the *Detroit Medical News*.

JAMES W. WILCOX, M.D., fifty-two, of Bay City, died September 5, 1959, in the crash of a light plane into Wrangler Lake, fifty miles northeast of Sault Ste. Marie. Doctor Wilcox was a past president of the Bay County Medical Society.

Communications

October 5, 1959

Dear Dr. Haughey:

When I was in Boston it was the custom of the various services holding weekly scientific meetings in the form of Grand Rounds and the like to list these with the *New England Journal of Medicine*.

Recently I shifted the Department of Surgery's Grand Rounds at the University of Michigan Hospital to Saturday mornings hoping that those in our neighborhood might be interested in attending them.

In looking over, incidentally as I do regularly, your very fine Journal it occurred to me that it might be possible for you to list a notice of these Grand Rounds which are held every Saturday except Saturdays of holiday weekends (Thanksgiving, Christmas, New Year's, Easter, etc.) from 8:30 to 10:00 at the University Hospital in the 2nd Floor Amphitheater, Room 2450. Although they are under my specific direction, they are also supported by Dr. Nesbit in Urology, Dr. Haight in Thoracic Surgery, and Dr. Kahn in Neurosurgery, and Dr. Badgley in Orthopedics.

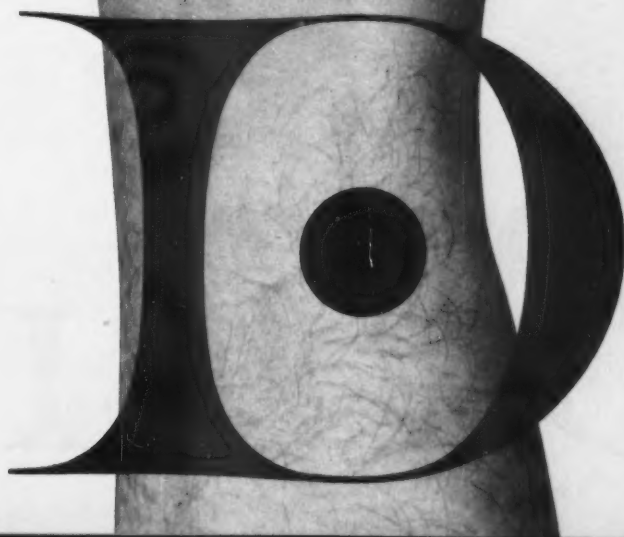
CHARLES G. CHILD, 3RD, M.D.,
Professor of Surgery and
Chairman of the Department

JMSMS



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Lederle introduces a masterpiece of antibiotic design



Strikingly enhances the traditional advantages of broad-spectrum antibiotics...

for greater patient-physician benefit

DECLOMYCIN is a unique fermentation product of a strain of *Streptomyces aureofaciens*—the parent organism of AUREOMYCIN[®] and ACHROMYCIN.^{®†}

DECLOMYCIN singularly achieves:

- far greater antibiotic activity with far less drug
- greater stability in body media
- unrelenting peak activity throughout therapy
- "extra-day" protection through sustained activity

DECLOMYCIN retains:

- unsurpassed broad-spectrum range of activity
- rapid activity
- excellent toleration
- effectiveness against infection in nearly all organs or systems—rapid diffusion in body tissues and fluids

*Chlortetracycline Lederle †Tetracycline Lederle

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Demethylchlortetracycline Lederle

Far greater antibiotic activity with far less antibiotic

Milligram for Milligram, DECLOMYCIN exhibits 2 to 4 times the clinical potency (inhibitory action) of tetracycline against susceptible organisms. Thus, DECLOMYCIN has the advantage of providing significantly higher serum *activity* levels with significantly reduced drug intake.*^{1,2,3}

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*Activity level is a far more meaningful basis of comparison than quantitative blood levels, as Hirsch and Finland note. Action upon pathogens is the ultimate value.¹

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The high level of DECLOMYCIN activity is uniquely sustained. It is not just an initial phenomenon but is constant—maintained on each day of treatment and between doses—without noticeable diminution of intensity. Peak-and-valley control is eliminated, favoring continuous suppression of pathogens and consequent improvement.

This DECLOMYCIN constant is achieved through remarkably greater stability in body fluids,^{2,4,6} resistance to degradation⁶ and a low rate of renal clearance^{4,5}—all supporting antibiotic activity for extended periods.

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“Extra-day” activity for security against relapse

DECLOMYCIN maintains significant antibacterial activity for one to two days after discontinuance of dosage¹—a major distinction from other antibiotics. Previous drugs have declined abruptly in activity following withdrawal.

DECLOMYCIN thus gives the patient an unusual degree of protection against resurgence of the primary infection, and against secondary infection... sequelae not infrequently encountered and often resembling a “resistance problem.” Consequently, reinstitution of therapy or a change in therapy should rarely be necessary.

MYCIN



A masterpiece of

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with far less antibiotic intake

unrelenting peak attack

—enhancing the unsurpassed features of
tetracycline...for greater physician-patient benefits

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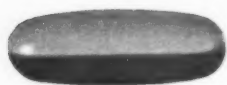
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DECLOMYCIN Capsules, 150 mg.

Adult dosage: 1 capsule four times daily.

Pediatric Drops, 60 mg. per cc.

Bottles of 10 cc. with dropper.

Oral Suspension, 75 mg. per 5 cc. tsp.

1. Hirsch, H. A., and Finland, M.: Antibacterial Activity Of Serum Of Normal Subjects After Oral Doses of Demethylchlortetracycline, Chlortetracycline and Oxytetracycline. *New England J. Med.* 260:1099 (May 28) 1959. 2. Hirsch, H. A., Kunin, C. M., and Finland, M.: Demethylchlortetracycline - A New And More Stable Tetracycline Antibiotic That Yields Greater and More Sustained Antibacterial Activity. To be published. 3. Lichter, E. A., and Sobel, S.: The Distribution Of Oral Demethylchlortetracycline In Healthy Volunteers And In Patients Under Treatment For Various Infections. To be published. 4. Kunin, C. M., Dornbush, A. C. and Finland, M.: Distribution And Excretion Of Four Tetracycline Analogues In Normal Young Men. To be published. 5. Kunin, C. M., and Finland, M.: Demethylchlortetracycline: New Tetracycline Antibiotic That Yields Greater and More Sustained Antibacterial Capacity. *New England J. Med.* 259:999 (Nov. 28) 1958. 6. Sweeney, W. M.; Hardy, S. M.; Dornbush, A. C., and Rueggsegger, J. M.: Demethylchlortetracycline: A Clinical Comparison of A New Antibiotic with Chlortetracycline and Tetracycline. *Antibiotics & Chemotherapy* 9:13 (Jan.) 1959.

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Disp # XVI

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NEWS MEDICAL

MICHIGAN AUTHORS

T. B. Patton, M.D., Champ Lyons, M.D., Birmingham, Alabama, C. G. Johnston, M.D., and Prescott Jordan, Jr., M.D., Detroit, are the authors of an article entitled, "Lateral Portacaval Anastomosis For Portal Hypertension," presented before the Course in Postgraduate Gastroenterology of the American College of Gastroenterology, New Orleans, Louisiana, October, 1958, and published in *The American Journal of Gastroenterology*, September, 1959.

Bernard E. Levine, M.D., and John M. Weller, M.D., Ann Arbor, are the authors of an article entitled, "A Comparison of Three Oral Diuretic Agents," published in the *University of Michigan Medical Bulletin*, July, 1959.

Ralph A. Straffon, M.D., and Antonio M. Garcia, M.D., Ann Arbor, are the authors of an article entitled, "A Clinical Evaluation of the Radioactive Diodrast Renogram as a Screening Test in Hypertension," presented at the Southeastern Section of the American Urological Association, Louisville, Kentucky, March 20 to April 2, 1959, and published in *The University of Michigan Medical Bulletin*, July, 1959.

William W. Coon, M.D., and Frederick A. Coller, M.D., F.A.C.S., Ann Arbor, are the authors of an article entitled, "Clinicopathologic Correlation In Thromboembolism," published in *Surgery, Gynecology and Obstetrics*, September, 1959.

Ralph A. Straffon, M.D., and Alton J. Coppridge, M.D., Ann Arbor, are the authors of an article entitled, "Respiratory Paralysis and Severe Potassium Depletion After Uretersigmoidostomy," read before the Section on Urology at the 108th Annual Meeting of the American Medical Association, Atlantic City, June, 1959, and published in *The Journal of the American Medical Association*, September 12, 1959.

Gilbert B. Saltonstall, M.D., Charlevoix, and Max Lichter, M.D., Detroit, are the authors of two articles which were published in the June, 1959, *Journal of the Michigan State Medical Society*, and reprinted in *Connecticut Medicine*, September, 1959. The titles are "The Norm is Shocking," and "The Physician Views Financing of Hospital and Medical Care," respectively.

Ronald C. Bishop, M.D., and Frank H. Bethell, M.D., Ann Arbor, are the authors of an article entitled, "Hereditary Hypochromic Anemia With Transfusion Hemosiderosis Treated With Pyridoxine," reported in part at the Seventh Congress of the International Society of Hematology, Rome, Italy, September, 1958, and published in *The New England Journal of Medicine*, September 3, 1959.

H. Rosenbaum, M.D., Robert Black, M.D., and D. W. Visscher, M.D., Detroit, are the authors of an article entitled, "Highlights—1959 Meeting—American College of Physicians," published in *Harper Hospital Bulletin*, July-August, 1959.

James B. Raymer, M.D., Dick A. Tarpinian, M.D., and Solomon G. Meyers, M.D., Detroit, are the authors of an article entitled, "Recurrent Symptoms After Cholecystectomy," published in *Harper Hospital Bulletin*, July-August, 1959.

Jan Nyboer, D.Sc., M.D., Detroit, is the author of an article entitled, "Regional Pulse Volume and Perfusion Flow Measurement: Electrical Impedance Plethysmography," published in *Harper Hospital Bulletin*, July-August, 1959.

Giovanni Chiappe, M.D., and J. H. Hertzler, M.D., Detroit, are the authors of an article entitled, "Pectus Excavatum," published in *Harper Hospital Bulletin*, July-August, 1959.

Louis A. Schwartz, M.D., Detroit, is the author of an article entitled, "Harper Hospital Profiles IV. Dr. Arnold Leon Jacoby," published in *Harper Hospital Bulletin*, July-August, 1959.

Philippe Lauwers, M.D., Ann Arbor, is the author of an article entitled, "Mechanisms of Action and Use of Chlorothiazide as an Antihypertensive Agent," published in the *International Record of Medicine*, September, 1959.

Joseph L. Ponka, M.D., J. DeWitt Fox, M.D., and Brock E. Brush, M.D., Detroit, are the authors of an article entitled, "Coexisting Carcinoma and Diverticula of the Colon," read at the 16th Annual Meeting of the Central Surgical Association, Montreal, February 20, 1959, and published in *AMA Archives of Surgery*, September, 1959.

Max E. Dodds, M.D., Flint, is the author of an article entitled, "Squamous-Cell Carcinoma of the Tonsil," read at the 16th Annual Meeting of the Central Surgical Association, Montreal, February 21, 1959, and published in *AMA Archives of Surgery*, September, 1959.

William J. Fry, M.D., Darrell A. Campbell, M.D., and Frederick A. Coller, M.D., Ann Arbor, are the authors of an article entitled, "Lymphangiosarcoma in Post-mastectomy Lymphedematous Arm," read at the 16th Annual Meeting of the Central Surgical Association, February 21, 1959, Montreal, and published in *AMA Archives of Surgery*, September, 1959.

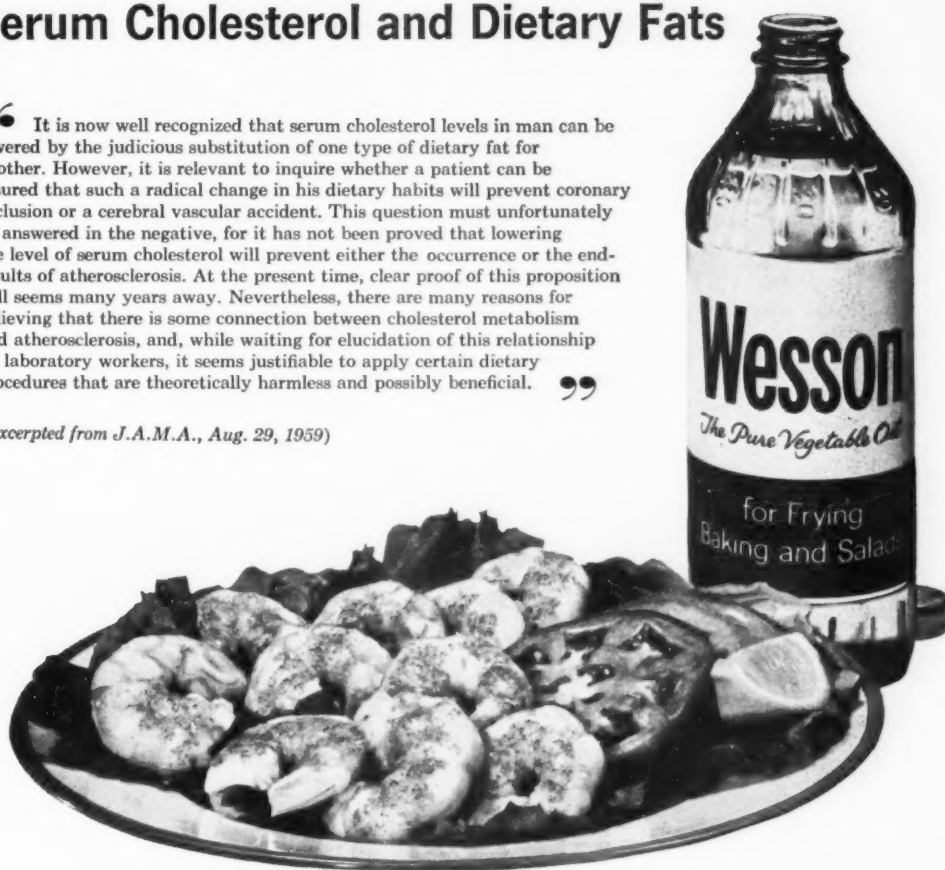
William H. Rattner, M.D., Detroit, is the author of an article entitled, "The Rare Prostatic Neoplasms," pub-

(Continued on Page 1886)

A Significant Statement about Serum Cholesterol and Dietary Fats

“ It is now well recognized that serum cholesterol levels in man can be lowered by the judicious substitution of one type of dietary fat for another. However, it is relevant to inquire whether a patient can be assured that such a radical change in his dietary habits will prevent coronary occlusion or a cerebral vascular accident. This question must unfortunately be answered in the negative, for it has not been proved that lowering the level of serum cholesterol will prevent either the occurrence or the end-results of atherosclerosis. At the present time, clear proof of this proposition still seems many years away. Nevertheless, there are many reasons for believing that there is some connection between cholesterol metabolism and atherosclerosis, and, while waiting for elucidation of this relationship by laboratory workers, it seems justifiable to apply certain dietary procedures that are theoretically harmless and possibly beneficial. ”

(Excerpted from *J.A.M.A.*, Aug. 29, 1959)



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| Never hydrogenated—completely salt free | |

*Reconfirmed by recent tests against the next leading brand with brand identifications removed, among a national probability sample.

NEWS MEDICAL

(Continued from Page 1884)

lished in *American Practitioner and Digest of Treatment*, September, 1959.

Peter A. Martin, M.D., and H. Waldo Bird, M.D., Detroit and Ann Arbor, are the authors of an article entitled, "A Marriage Pattern: The 'Lovesick' Wife And The 'Cold, Sick' Husband," published in *Psychiatry: Journal for the Study of Interpersonal Processes*, August, 1959.

* * *

The Legislative Committee of MAP reports that the 1959 Michigan Legislature has made three significant changes in the Business Activities Tax (BAT) law, applicable to all professions and businesses:

1. The tax rate is increased from $6\frac{1}{2}$ mills to $7\frac{3}{4}$ mills.
2. The \$10,000 general exemption is increased to \$12,500.
3. Taxes on those professional practices and businesses experiencing a low-profit or non-profit year may be substantially reduced with the incorporation of a new "tax credit formula."

For professional practices and businesses grossing \$100,000 or less the tax credit formula is of little importance.

The significant result of these changes is that professional persons and businessmen grossing up to \$51,000 will pay the same or a lesser tax than at present. Professional practices or businesses grossing from \$51,000

to \$100,000 will pay up to a maximum of \$30.63 more than under the old schedule.

* * *

Lecturer from Delhi.—Doctor B. K. Anand (M.D.), chairman of the department of physiology at the All-India Institute of Medical Sciences in Delhi, gave a public lecture September 11 at the University of Michigan Medical Center under the sponsorship of the U-M departments of psychology and psychiatry.

A specialist in changes in bodily activities caused by stimulation of the deep parts of the brain, Dr. Anand is visiting research laboratories in the United States and Canada under a Rockefeller Foundation fellowship.

* * *

Clean Work Space.—Speaking before the Institute of Sanitation Management, Howard F. Wolf, building service superintendent of the 1,050-bed University Hospital, said a trained and specialized group should have primary responsibility for keeping production work-space clean.

* * *

New Appointment.—Bruce D. Graham, M.D., professor of pediatrics at the University of Michigan Medical Center, has been appointed Chairman of the Department of Pediatrics at the University of British Columbia in Vancouver, Canada.

He will assume his new position in November.

Dr. Graham joined the Medical Center staff after receiving his M.D. degree from Vanderbilt University in

(Continued on Page 1888)

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VIGRAN CHEWABLES *taste like candy*, but contain *no ingredients harmful to teeth*. Important, too, is that VIGRAN CHEWABLES *dissolve easily* in the mouth and *smell good*. These advantages will also appeal to your elderly patients. And VIGRAN CHEWABLES provide at least 125% of the minimum daily requirements for vitamins A, D, B₁, B₂, niacinamide and C, and significant amounts of other essential vitamins.

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Schering

(Continued from Page 1886)

1942. He is a Diplomate of the American Academy of Pediatrics and a member of the Society of Pediatric Research. His research interests lie in the study of the metabolism of premature and newborn infants.

* * *

Medical Students.—Researchers at the University of Michigan predict that expansion of college enrollment will double the number of Michigan applicants to medical schools by 1967. The future supply of medical school applicants will be adequate for any contemplated expansion of medical training facilities in Michigan.

Studies have been under way for several years looking toward the possible creation of a third medical school in the state. The two existing medical schools at Wayne State University and the University of Michigan have space for only 325 future doctors each year.

Each year over half the freshman medical students from Michigan come from metropolitan Detroit. An additional 34 per cent come from the state's populous southern counties. All the rest of Michigan provides only 13 per cent of each entering class.

The researchers also learned that students from different pre-medical colleges have varied success when applying to medical schools.

Sixty-nine per cent of applicants who take pre-med training at the "big" universities—Wayne, MSU and the U-M—are accepted. This compares with 57 per cent accepted who had their training in smaller colleges.

A controversial aspect of medical school placement concerns the out-of-state student. Here the investigators found "Michigan is a debtor state." For 1957 (when the last complete data were analyzed), forty-eight Michigan students entered out-of-state medical schools, while only 25 out-of-state students were admitted to Michigan medical schools.—S. J. AXELROD and W. R. MILLS in *Journal of Medical Education*, September.

* * *

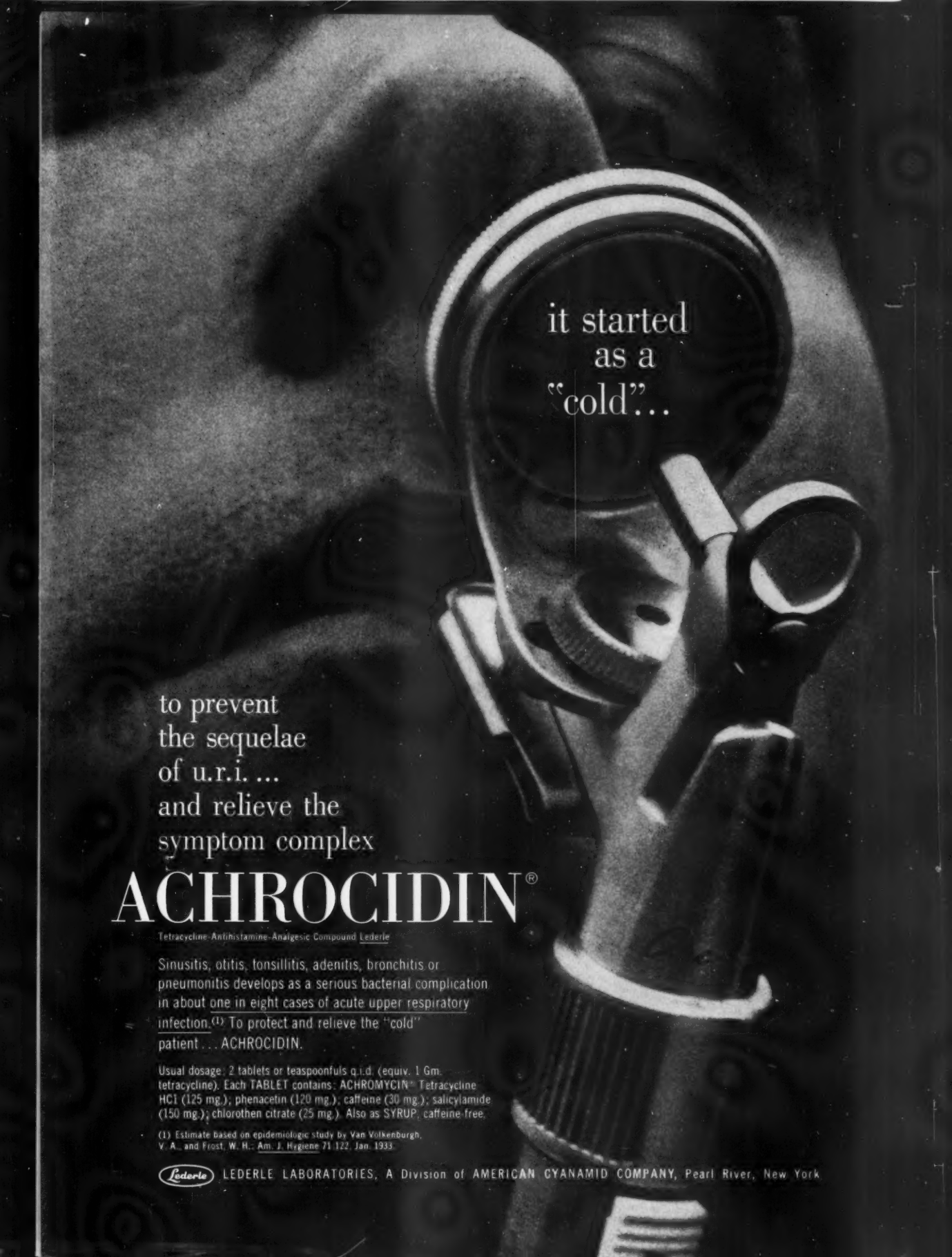
Staphylococcal Infections.—The National Library of Medicine has just issued a supplement to the bibliography on Staphylococcal infections. Copies may be obtained at no cost by applying to the Acquisition Division, National Library of Medicine, Washington, 25, D. C.

* * *

Tuberculosis and Adult Health.—C. J. Tupper, M.D., Assistant Dean, University of Michigan Medical School, and Frank Reynolds, M.D., Associate Professor, School of Public Health, University of Michigan, will be the speakers at the Seventh Annual In-Service Training Program in Chronic Disease of the Michigan Department of Health to be held December 14 and 15.

Doctor Tupper and Doctor Reynolds will speak at a dinner meeting in the Porter Hotel at 6:30 P.M. on Monday, December 14. Doctor Tupper's subject is "Periodic Health Appraisal." Doctor Reynolds will speak on "Community Health Implications." All interested physicians are invited to attend. Reservations for the dinner meeting should be made through the Division of Tuberculosis and Adult Health, Michigan Department of Health, IV 4-1491, Ext. 232 and ask for Mrs. Marcella Pierce.

(Continued on Page 1890)



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"cold"...

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and relieve the
symptom complex

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(1) Estimate based on epidemiologic study by Van Volkenburgh, V. A., and Frost, W. H., *Am. J. Hygiene* 71:122, Jan. 1933.



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(Continued from Page 1888)

Honored by A.M.W.A.—Jacques Pierce Gray, B.A., M.D., M.P.H., Detroit, Mich., educator, investigator, scientist, medical leader and Visiting Lecturer of the American Medical Writers' Association, has been honored as recipient of its Distinguished Service Award for 1959. In his association with the special services of Parke, Davis & Company, Dr. Gray has traveled widely throughout the United States and Canada, giving lectures on medical writing to students in medical schools and training hospitals in an endeavor to improve communication in medicine and its allied fields.

The Distinguished Service Award is given annually to a fellow of the Association "who has made distinguished contributions to medical literature or rendered unusual and distinguished services to the medical profession." The citation given in connection with the award reads in part: "Through your indefatigable participation in educating young men in medical writing and medical communication, you have greatly advanced the motives of the American Medical Writers' Association. Your work as a member of the United States Public Health Service, as an epidemiologist in the State of California and your teaching in Stanford University School of Medicine, did much to prepare you for this contribution. Your subsequent activities as a director of public health projects for the Kellogg Foundation and as dean of the School of Medicine and Professor of public health in Virginia and as dean of the School of Medicine in the University of Oklahoma gave you practice and prestige in medical education."

Gifts and Research Grants.—The University of Michigan Board of Regents at its meeting on September 25, 1959 accepted gifts, grants and bequests totalling \$444,152.44. Among those with a medical significance were:

From the estate of Floyd Fletcher Wooton, Waterford Township, Oakland County, the Regents accepted \$38,100 representing the first partial distribution of a bequest to the U-M for "support of research investigation of paralysis and mental and nervous disorders associated with disorders of the blood vessels of the central nerves." The Sarah Pegg Wooton and Jeannette Amanda Wooton Memorial Fund has been established for this purpose. The fund is named in memory of Wooton's mother, Sarah Pegg Wooton, and of his wife, Jeannette Amanda Wooton; \$31,622 from the W. K. Kellogg Foundation, Battle Creek, with \$23,622 representing the first payment on a five-year commitment of \$158,800 to establish the Kellogg Foundation Hospital Administration Program Development Fund. There was a second grant of \$8,000 representing the third payment on a five-year commitment to the Medical School for training of teachers in the area of genetics under the direction of Dr. James V. Neel.

From the estate of Miss Margaret R. Lynds, Moncton, New Brunswick, Canada, the Regents accepted a bequest of \$25,000 to establish the Dr. James Lynds Fellowship, in memory of her brother. The net annual income from this fund is to be awarded annually to enable a Medical

(Continued on Page 1896)



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... WEIGHT DOWN

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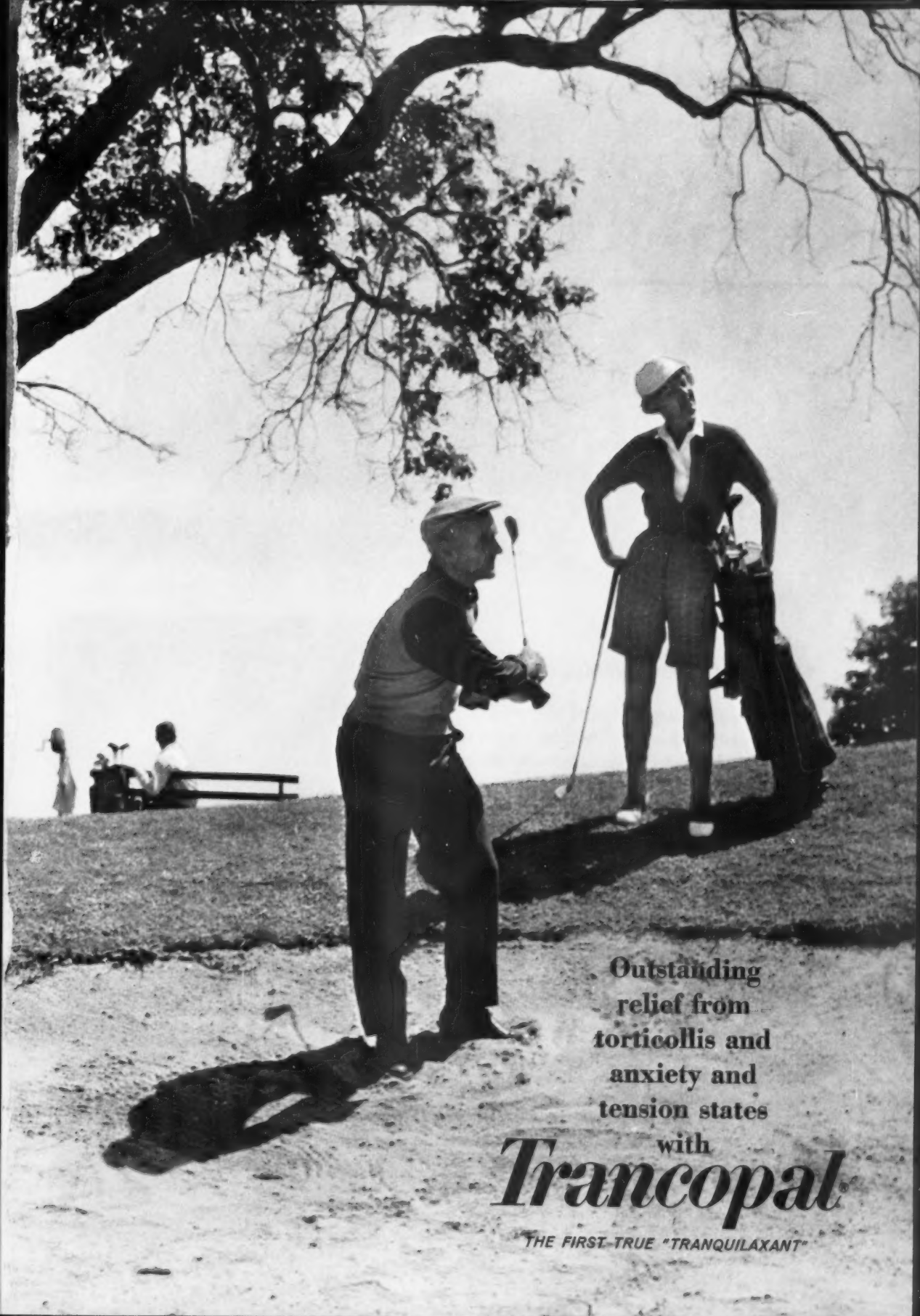
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| Amobarbital | 45 mg. | Ferrous Sulfate | 20.0 mg. |
| Vitamin A | 6,000 Units | Cobalt Sulfate | 0.40 mg. |
| Vitamin D | 400 Units | Copper Sulfate | 2.6 mg. |
| Vitamin B-1 | 1.6 mg. | Sodium Molybdate | 0.45 mg. |
| Vitamin B-2 | 2.5 mg. | Zinc Sulfate | 3.9 mg. |
| Niacinamide | 15.5 mg. | Potassium Iodide | 0.13 mg. |



PAGE 826

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case profile no. 2840*

A 55-year-old man complained of a painful, very stiff neck on the left side. There was marked muscle spasm that seemed to involve primarily the trapezius muscle. He had a severe headache, with the pain radiating down the left side of the neck to the shoulder. There were no other findings on physical examination and results of routine laboratory tests were normal.

Trancopal was prescribed in a dosage of 200 mg. q.i.d. The first and second dose of Trancopal gave only moderate relief. However, after the third dose, there was marked relief of the stiffness of the neck, as well as the headache and shoulder pain.

After the fourth dose, medication was gradually decreased and was discontinued on the sixth day. One week later, the patient had moderate recurrence of the torticollis, and Trancopal was again prescribed in doses of 200 mg. q.i.d. The patient obtained complete relief in one day and no further treatment was required.

for torticollis



THE FIRST TRUE "TRANQUILAXANT" *Trancopal*®

for anxiety and
tension states



case profile no. 3382*

A 35-year-old woman, a professional model, had an acute, severe attack of anxiety. She was irrational and unable to eat, and was very restless.

Initial medication consisted of aspirin with codeine and later meprobamate. Neither was effective, and the patient's condition became worse. She had to be hospitalized because of the marked anxiety. Trancopal was then prescribed in a dosage of 200 mg. q.i.d., in addition to bed rest.

After the second dose of 200 mg. of Trancopal, the patient became calm and rational, and was able to eat. The dosage of Trancopal was gradually reduced to 100 mg. q.i.d. on the fourth hospital day, after which the patient was discharged and was able to return to her normal occupation.

**Clinical Reports on file at the Department of Medical Research, Winthrop Laboratories.*

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potent MUSCLE RELAXANT
effective TRANQUILIZER

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Neck pain (torticollis, etc.)
Low back pain (lumbago, etc.)
Bursitis
Rheumatoid arthritis
Osteoarthritis
Disc syndrome
Fibrositis
Ankle sprain, tennis elbow, etc.
Myositis
Postoperative muscle spasm

Psychogenic¹

Anxiety and tension states
Dysmenorrhea
Premenstrual tension
Asthma
Angina pectoris
Alcoholism

Dosage: Adults, 100 or 200 mg. orally three or four times daily. Relief of symptoms occurs in fifteen to thirty minutes and lasts from four to six hours. The higher dosage is recommended for the treatment of patients in the acute stages of painful musculoskeletal conditions, and anxiety and tension states. Children (5 to 12 yrs.), 50 mg. three or four times daily.

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"Chlormethazone [Trancopal] not only relieved painful muscle spasm, but allowed the patients to resume their normal activities with no interference in performance of either manual or intellectual tasks."²

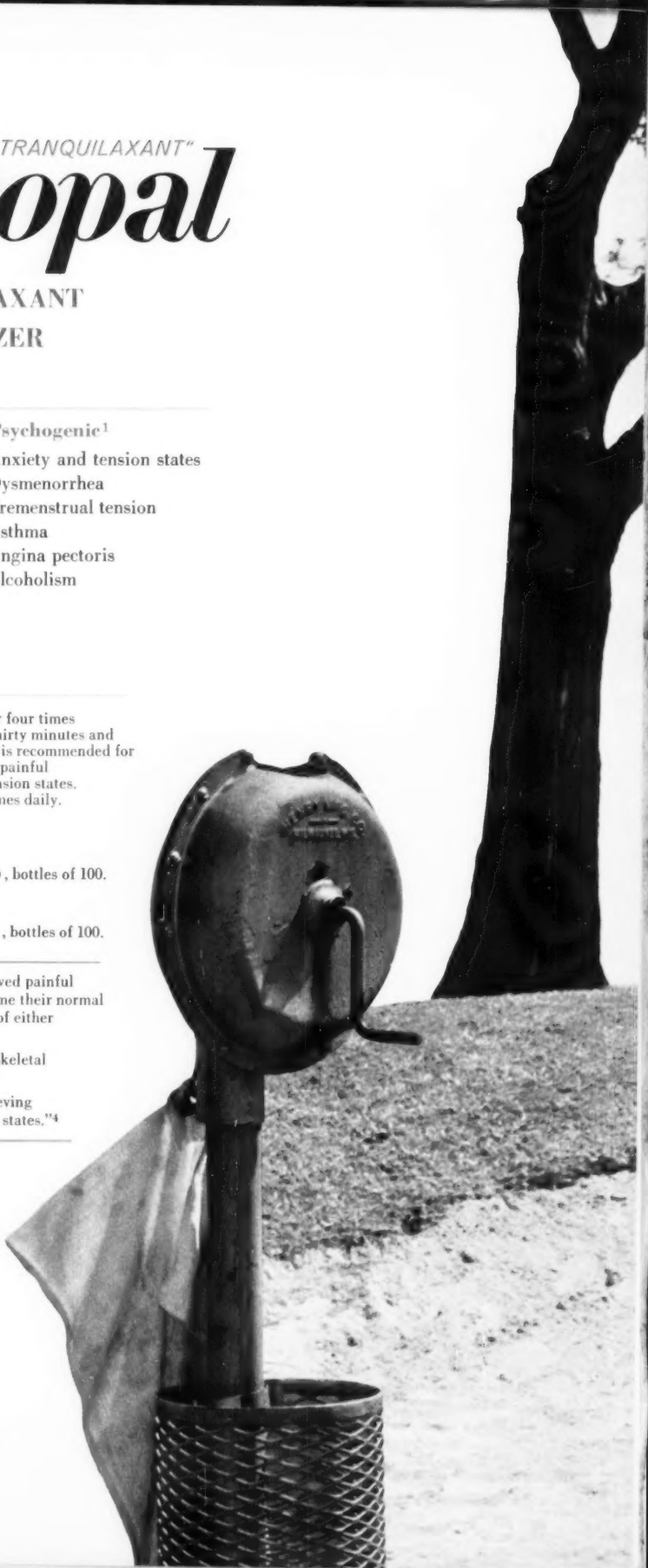
"The effect of this preparation in these cases [skeletal muscle spasm] was excellent and prompt..."³

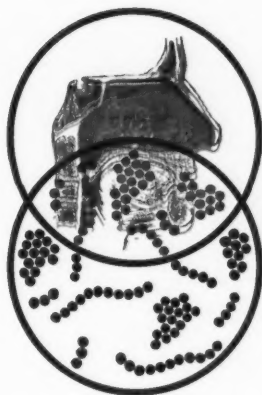
"... Trancopal is a most valuable drug for relieving tension, apprehension and various psychogenic states."⁴

1. Collective Study, Department of Medical Research, Winthrop Laboratories.
2. Lichtman, A. L. (N.Y. Polyclinic M. Sch. & Hosp.): *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958.
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when upper
respiratory congestion
is complicated
by bacterial invaders

TRISULFAMINIC provides logical therapy

- for the patient ill with congestion and infection of the upper respiratory tract, as in purulent rhinitis, sinusitis, tonsillitis and otitis media, when caused by sulfa-susceptible bacteria;
- because secondary invasion by such bacteria so frequently follows the common cold.¹

the reasons for combining Triaminic with triple sulfas

Triaminic and triple sulfas are not only pharmacologically *compatible*, they are a therapeutically *logical* combination for upper respiratory infections: Triaminic for effective decongestant relief from rhinitis, rhinorrhea and sinusitis;² triple sulfas for well-established antibacterial action.

The advantages of Trisulfaminic in upper respiratory infections include: proved effectiveness; safety; economy; ease of administration; less likelihood of sensitivity reactions;³ compatibility with antibiotics and other antibacterial therapy. Provided also as Suspension for additional convenience.

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TRIAMINIC WITH TRIPLE SULFAS

Available as TABLETS and SUSPENSION

Each easy-to-swallow Trisulfaminic Tablet or 5 ml. teaspoonful of Suspension provides:

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|-----------------------------------|-----------|
| Triaminic [®] | 25 mg. |
| (phenylpropanolamine HCl 12.5 mg. | |
| pheniramine maleate | 6.25 mg. |
| pyrilamine maleate | 6.25 mg.) |
| Trisulfapyrimidines, U.S.P. | 0.5 Gm. |

Dosage:

Adults—2 to 4 tablets or tsp. initially, followed by 2 tablets or tsp. every 4 to 6 hours until the patient has been afebrile 3 days. **Children 8 to 12**—2 tablets or tsp. initially, followed by 1 tablet or tsp. every 6 hours. **Children under 8**—dosage according to weight.

The palatability, convenience and effectiveness of the Suspension make it especially suitable for children and for those older patients who prefer liquid medication.

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NEWS MEDICAL

(Continued from Page 1896)

School graduate in further study or research in surgery.

A total of \$13,480 was accepted from the Mott Foundation, *Flint*, with \$8,740 to be used for two dentistry fellowships and \$4,740 for medical scholarships.

W. K. Kellogg Company, *Battle Creek*, has given a total of \$12,400 in two grants with \$10,000 for research by Dr. H. Marvin Pollard dealing with gluten in the absorption of fat, carbohydrate and protein in wheat sensitive patients. A grant of \$2,400 is to establish a fund for a study of concentrate acceptability, also under the direction of Dr. Pollard.

There were two grants in a total amount of \$6,250 from Parke, Davis and Company, *Detroit 32*. One of \$5,000 is for the Edgar A. Kahn Neurosurgery Fund and there was one of \$1,250 for surgical research.

U.M. Research Grants.—The Aaron Mendelson Memorial Trust, 1900 National Bank Bldg., *Detroit*, has made a grant of \$5,000 representing the first annual installment on a \$15,000 grant for the Edgar A. Kahn Neurosurgery Fund.

The Michigan Heart Association, 3919 John R., *Detroit 1*, has made a quarterly payment on the Dean's Fund amounting to \$3,814.

Clyde W. Clark, Dearborn Tool & Die Co., 10200 Ford Road, *Dearborn*, has given \$3,205 for intestinal research by Dr. H. Marvin Pollard.

The Department of Biological Chemistry will receive

\$3,000 as an unrestricted grant from the Upjohn Company, *Kalamazoo*.

A grant-in-aid of \$2,000 for chemical study of anti-inflammatory agents under the direction of Dr. John M. Sheldon has been provided by William S. Merrell Company, *Cincinnati 15, O.*

* * *

Midwinter Seminar.—The Fourteenth Annual Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held in January, 1960, convening January 24 and continuing through January 30. The Americana at 9701 Collins Avenue, Miami Beach, has again been chosen for this year's meeting.

The lectures on Ophthalmology will be presented on January 25, 26 and 27. The lecturers for these courses will be the distinguished Ophthalmologists, Bernard Becker, M.D., St. Louis, Missouri; David C. Cogan, M.D., Boston, Massachusetts; Robert N. Shaffer, M.D., San Francisco, California; Joseph A. C. Wadsworth, M.D., New York City, New York; and Frank B. Walsh, M.D., Baltimore, Maryland.

The outstanding speakers, who will lecture on Otolaryngology on January 28, 29 and 30 are Lawrence R. Boies, M.D., Minneapolis, Minnesota; Maurice H. Cottle, M.D., Chicago, Illinois; Howard P. House, M.D., Los Angeles, California; Merle Lawrence, Ph.D., Ann Arbor,

(Continued on Page 1898)



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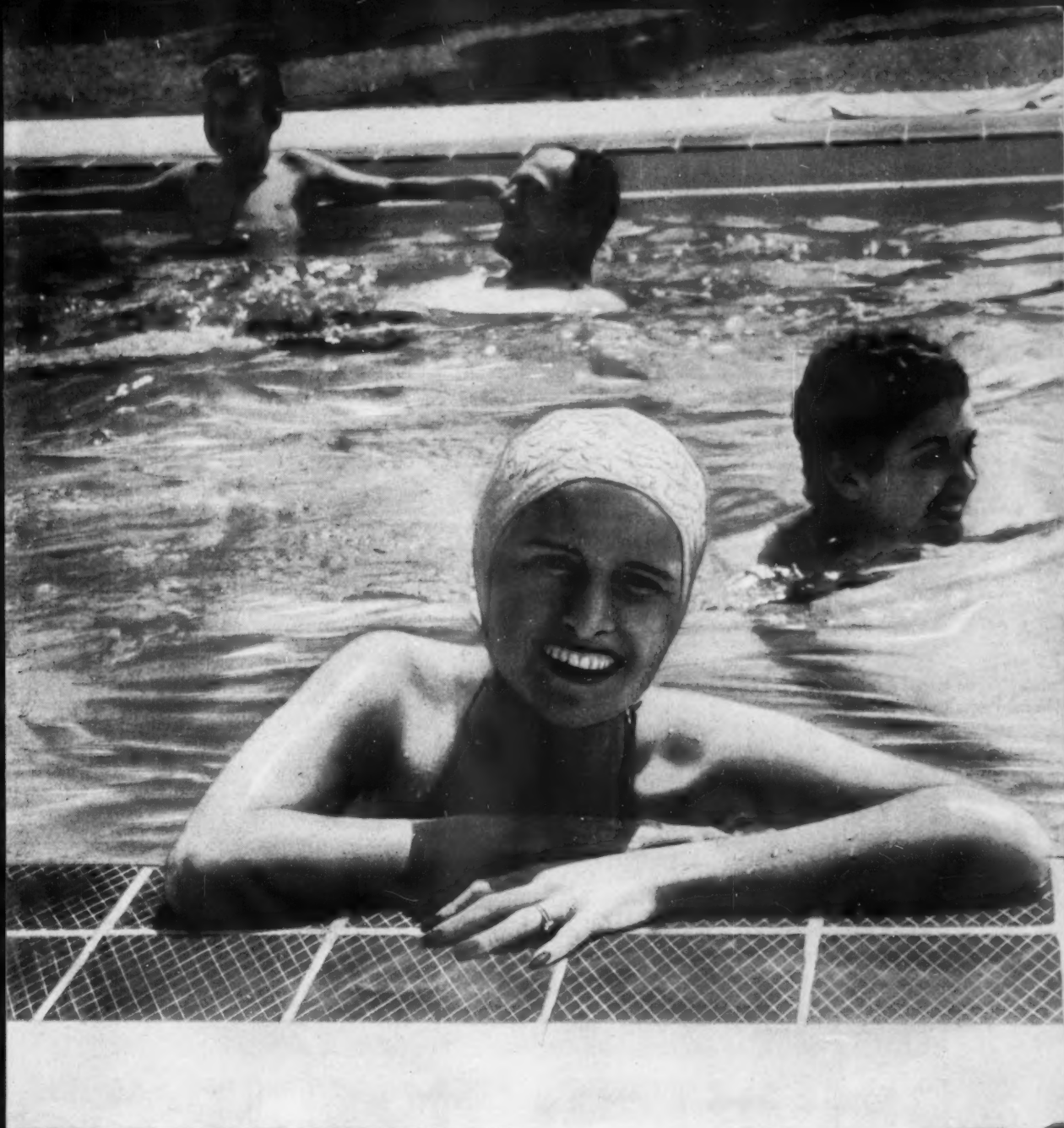
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The patient isn't alone in her de-

votion to this natural estrogen. Doctors, husbands, and family all like what it does for the patient, the wife, and the homemaker.

When, because of the menopause, the psyche needs nursing—"Premarin" nurses. When hot flushes need suppressing, "Premarin" suppresses. In short, when you want to treat the

whole menopause, (and how else is it to be treated?), let your choice be "Premarin," a complete natural estrogen complex.

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(Continued from Page 1896)

Michigan; and Joseph H. Ogura, M.D., St. Louis, Missouri.

The complete program with a schedule of lectures and the titles of all papers will be sent about November 15.

On Wednesday afternoon, January 27, at 6:30 P.M., all registrants and their wives will be guests at a cocktail party at the Americana. At 8 P.M. Wednesday evening, there will be an informal dinner for all registrants and their wives, with dancing and an outstanding floor show. Tickets at \$10.00 each (which include gratuities) must be obtained in advance. The price of the dinner tickets can be included in your check for your Seminar deposit. This will be refunded if you cannot attend, provided forty-eight (48) hours notice is given. Apply at the Registration Desk for your tickets on arrival.

* * *

Poliomyelitis Rehabilitation Research.—Problems of returning severely disabled polio patients to worthwhile living will continue to be studied during the coming year at the Poliomyelitis and Rehabilitation Center of the University of Michigan Hospital in Ann Arbor, supported by a \$93,929 March of Dimes grant.

The award was made public jointly by Dr. A. C. Kerlikowske, director of the University Hospital, and Basil O'Connor, president of The National Foundation.

Medical director of the Poliomyelitis and Rehabilitation Center is David G. Dickinson, M.D. His group

had to expand its operation to care for respiratory patients who were stricken during the worst polio epidemic in Detroit's history last year.

One of sixteen polio demonstration and evacuation centers supported by the March of Dimes across the nation, the Ann Arbor center carries on a three-fold program of (1) giving comprehensive care to severely paralyzed polio patients; (2) teaching modern rehabilitation techniques to medical professional personnel, including physicians, nurses, physical therapists, medical social workers and others; and (3) conducting clinical research in polio problems to improve procedures for restoring the handicapped to as nearly a normal life as possible.

* * *

Congenital Esophageal Atresia.—The earliest known report of esophageal atresia was made by a physician named William Durston 300 years ago. However, the first successful operation which completely corrected the condition and saved a child was done at the U-M Medical Center.

Surgeons at The University of Michigan Medical Center have successfully carried out more than 200 operations.

There are several varieties of the abnormality. Most commonly, the upper portion of the esophagus ends in a blind sack, and the lower portion (leading to the stomach) grows out of the windpipe.

(Continued on Page 1900)

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A non-profit foundation

FOR ALCOHOLISM

A facility designed to rehabilitate or to aid the addict in arresting his addiction.

Brighton Hospital meets the standards established by the Michigan State Board of Alcoholism and is recommended by that Board.

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Incremin
Lysine-Vitamins Lederle
with iron Syrup
for the
undersized
underweight child

build appetite
with
B complex
vitamins

prevent
nutritional
anemia
with ferric pyrophosphate,
a form of iron
exceptionally
well-tolerated

promote
protein uptake
with the
potentiating effect
of I-Lysine on
low-grade
protein foods

*in taste-tempting
cherry flavor*

Average dosage, 1 teaspoonful
(5 cc.) contains:

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| I-Lysine HCl | 300 mg. |
| Vitamin B ₁₂ Crystalline | 25 mcgm. |
| Thiamine HCl (B ₁) | 10 mg. |
| Pyridoxine HCl (B ₆) | 5 mg. |
| Ferric Pyrophosphate (Soluble) | 250 mg. |
| Iron (as Ferric Pyrophosphate) | 30 mg. |
| Sorbitol | 3.5 Gm. |
| Alcohol | .75% |

Bottles of 4 and 16 fl. oz.



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NOVEMBER, 1959

Say you saw it in the *Journal of the Michigan State Medical Society*

1899

NEWS MEDICAL

(Continued from Page 1898)

Since food cannot reach the stomach, the infant will die of starvation if the disorder goes uncorrected.

Correction of the disorder requires a three-hour operation by a team of six, including doctors, nurses and anesthetists.

If there is too great a gap in the natural esophagus to permit joining its ends together, the surgeon must form the connection by transplanting a portion of the patient's own intestine. This requires a second operation when the child is two or three years old.

* * *

American Academy of Pediatrics.—Three U.M. Professors attended the Annual Session in Chicago, October 5-7, 1959. Dr. Harry A. Towsley, professor of pediatrics and communicable diseases and associate director of the Department of Postgraduate Medicine; Dr. Arthur C. Curtis, chairman of the Department of Dermatology; and H. Harlan Bloomer, director of the Speech Clinic.

Professor Bloomer was chairman of a roundtable discussion on hearing and speech problems of children.

* * *

The annual Wayne State University Symposium on Blood regularly held during the third week in January will be dropped this year. Thus the ninth one will be scheduled for 1961. Detroit will, however, be the host city for an International Symposium on Platelets sponsored by the Henry Ford Hospital. The dates for this event are March 17, 18, and 19 in 1960. Inquiries

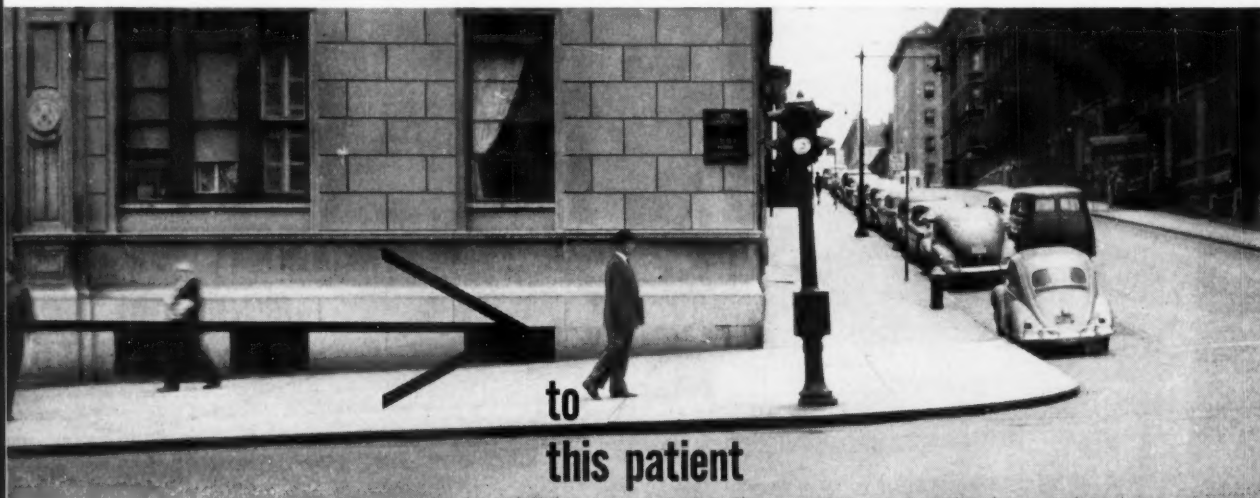
may be addressed to Shirley A. Johnson, at Henry Ford Hospital, Detroit. She is serving as chairman of the local committee. Walter H. Seegers is chairman of the National Advisory Committee.

* * *

Michigan Tuberculosis Association.—Dr. C. J. Stringer, medical director of the Ingham Chest Hospital, was re-elected president of the M.T.A. at the 52nd annual meeting. Others re-elected were Charles H. Baker of Jackson, first vice president; Lloyd Humbarger of Battle Creek, second vice president; Mrs. Cecil O. Creal of Ann Arbor, secretary; and Harry D. Bennett of Lansing, treasurer. Named to the M.T.A. Executive Committee were Owen Baughman of Kalamazoo, Dr. Henry J. Klos of St. Joseph, Dr. Arthur W. Strom of Hillsdale, Theo V. Eddy of St. Clair, F. R. Phillips of Alma, William E. Shane of Detroit, and Dr. Oscar D. Stryker of Mt. Clemens.

* * *

The Vaughan Award.—Dr. Henry F. Vaughan, recently retired dean of the University of Michigan School of Public Health, was honored at the 52nd annual meeting of the M.T.A. Theodore J. Werle, former M.T.A. executive, presented a silver tray to Dr. Vaughan on behalf of the Christmas Seal organization. Werle said that during Vaughan's twenty-two years of service as health commissioner of Detroit, he developed a tuberculosis control system second to none in the nation. . . . "Although Dr. Henry Vaughan has been an active



with intermittent claudication
every block was a mile long

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makes the blocks so much shorter...
he can walk many more of them in comfort

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NEWS MEDICAL

leader in numerous phases of public health," Werle said, "his work in tuberculosis alone is enough to make him one of Michigan's great sons."

* * *

American Board of Obstetrics and Gynecology.—The Part I Examinations of the American Board of Obstetrics and Gynecology are to be held in various parts of the United States and Canada, on Friday, January 15, 1960, at 2:00 P.M.

Candidates notified of their eligibility to participate in Part I must submit their case abstracts within thirty days of notification of eligibility. No candidate may take the Written Examination unless the case abstracts have been received in the office of the Secretary.

Current Bulletins outlining present requirements may be obtained by writing to the Secretary's office, Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

* * *

Student American Medical Association.—Austin E. Smith, M.D., President of the Pharmaceutical Manufacturers Association of Washington, D. C., has accepted appointment to the National Advisory Council of the Student American Medical Association, world's largest independent association of resident physicians, interns and medical students. Dr. Smith's acceptance fills the vacancy caused by the death of Dr. Warren E. Furey, Chicago.

Serving with Doctor Smith, former editor of *The Journal of the American Medical Association*, on the Council are: David Buchanan, M.D., Past National President of SAMA, Huron, South Dakota; Ward Darley, M.D., Executive Director, Association of American Medical Colleges, Evanston, Illinois; Mark R. Everett, Ph.D., Dean, University of Oklahoma School of Medicine, Oklahoma City; Hugh H. Hussey, Jr., M.D., Dean, Georgetown University School of Medicine, Washington, D. C., and Edward L. Turner, M.D., Director, Division of Scientific Activities, American Medical Association, Chicago, Illinois.

* * *

The American Academy of Physical Medicine and Rehabilitation announce the election of the following officers for 1959-60:

President, Clarence W. Dail, M.D., Los Angeles
President-Elect, Ray Piaskoski, M.D., Milwaukee
Vice-President, Robert W. Boyle, M.D., Milwaukee
Secretary, Harriet E. Gillette, M.D., Gainesville, Fla.
Treasurer, James W. Rae, Jr., M.D., Ann Arbor, Mich.
Executive Secretary, Dorothea C. Augustin, Chicago

Also elected to serve on the Board of Governors of the American Academy of Physical Medicine and Rehabilitation for a three-year term is Herman L. Rudolph, M.D., of Reading, Pennsylvania.

* * *

Frederick G. Germuth, M.D., pathologist at the Charlotte Memorial Hospital, Charlotte, North Carolina, ad-



arlidin.

brand of nylidrin hydrochloride N.N.D.

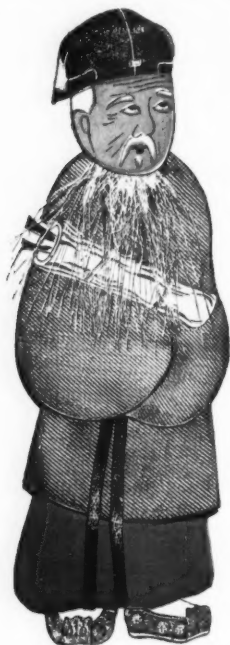
safely increases local blood supply and oxygen
where needed most... in distressed "walking" muscles
for sustained, gratifying relief of pain and spasm in

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dressed the annual meeting of the Michigan Pathological Society on October 10 in Grand Rapids on the subject, "Hypersensitivity Diseases." Dr. Germuth, formerly associate professor of pathology at Johns Hopkins University Medical School, also conducted a seminar on problem slides of diseases related to the antigen-antibody reaction for the assembled pathologists. The meeting was held at the Pantlind Hotel.

* * *

American College of Surgeons.—At its annual session, Atlantic City, October 2, 1959, 1,015 surgeons were inducted formally as new Fellows of the American College of Surgeons in cap-and-gown ceremonies closing the annual five-day Clinical Congress of the world's largest organization of surgeons. The F.A.C.S. group, founded in 1913 to establish standards of competency and character for specialists in surgery, has grown in forty-six years' time from a founding group of 450 to a total membership of more than 23,250.

Fellowship, entitling the recipient to the designation, "F.A.C.S.," following his name, is awarded to doctors who fulfill comprehensive requirements for acceptable medical education and advanced training as specialists in one or another of the branches of surgery, and who give evidence of good moral character and ethical practice.

Those receiving this distinction from the State of Michigan at the 1959 Convocation are as follows:

Ann Arbor

Gerhard H. Bauer
William W. Coon
Louis P. Kivi
George W. Morley
Ian M. Thompson

Birmingham

John O. Esslinger
John H. McLaughlin

Coldwater

Charles R. Bacon

Dearborn

Vincent J. Marecki

Detroit

Frederick J. Fischer
Thomas M. Flake
Garnet T. Ice
John L. Kitzmiller
Sherwin J. Lutz
Donald F. Percy
Albert D. Ruedemann, Jr.
Richard E. Straith
John J. Turner
Irvin A. Wilner

Eloise

Alfred H. F. Lui

Flint

Burt A. Parliament

Grand Rapids

Samuel M. Oates
Ernest L. Overbeek
Robert N. Whittenberger

Grosse Pointe

Roger F. McNeill

Iron Mountain

David C. Peters

Kalamazoo

Frederick L. Clement
Robert H. Hume

Lansing

Thomas C. Baker
D. Bonta Hiscoe

Lincoln Park

Herbert A. Davis

Marquette

Marvin H. Schultz

Monroe

Dale W. Douglas

Owosso

James S. McGeehan

Pontiac

James W. Gell
Robert L. Segula
John R. Ylvisaker

Port Huron

Alvin N. Morris

Royal Oak

John L. Barrett

Saginaw

Edward F. Kickham
Thomas V. Kretschmer
Perry E. Prather

Traverse City

Theodore N. Cline

Ypsilanti

George S. Sayre

(Continued on Page 1906)



for the acute asthmatic attack

rapid control by the oral route
without fear of g.i. intolerance

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Dosage: Adults—2 tablespoonfuls t.i.d. Children—2 to 3 teaspoonfuls if over 12 years; 1 to 2 teaspoonfuls if 6-12 years; 1 teaspoonful if 3-6 years; ½ to 1 teaspoonful if 1-3 years. May be repeated after 8 hours.

Bottles of 1 pint, 1 gallon.



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for subacute
and chronic
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symptomatic control
by the oral route
without fear of
g.i. intolerance

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xanthine¹⁻³—theophylline sodium glycinate—
in a comprehensive formulation for full
symptomatic control...keeps patient com-
fortable and reduces incidence and
severity of acute attacks • in emphysema
due to allergic asthma or chronic infectious
bronchitis, it provides rapid bronchial
dilatation, as well as decongestant and
expectorant benefits

Each SYNATE Tablet contains:
Theophylline Sodium Glycinate . . . 360 mg.
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Racephedrine Hydrochloride . . . 30 mg.
Potassium Iodide . . . 300 mg.
Secobarbital . . . 20 mg.
(Warning: May be habit-forming)
Niacinamide . . . 40 mg.

Dosage: One tablet q.i.d. with water.
Bottles of 100, 500.

1. United States Dispensatory (Osol-Farrar), ed. 25,
Philadelphia, Lippincott, 1955, p. 1412. 2. A.M.A.
Council on Drugs: New and Nonofficial Drugs 1959,
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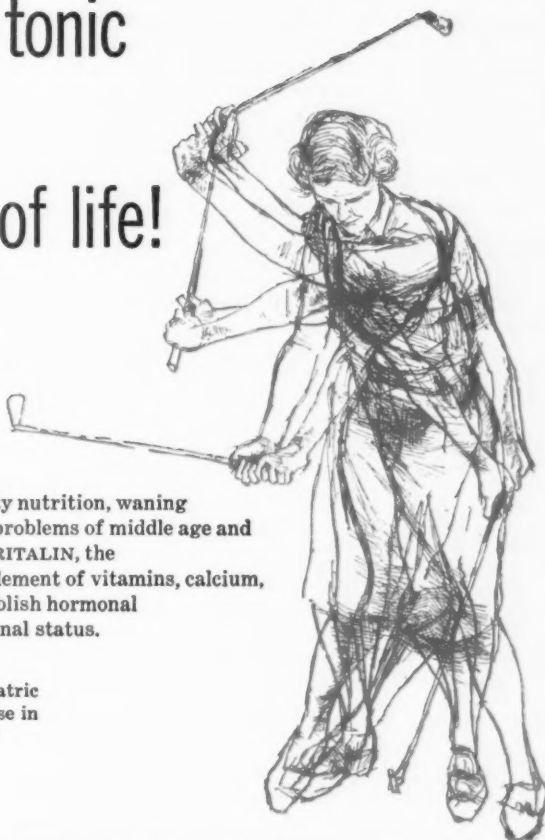
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"We found Ritonic to be a safe, effective geriatric supplement . . ."¹ "Patients reported an increase in alertness, vitality and sense of well being."²

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for your geriatric patients, your middle-aged patients and your postmenopausal patients.

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| <i>methyltestosterone</i> | 1.25 mg. |
| <i>ethinyl estradiol</i> | 5 micrograms |
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| <i>riboflavin (vitamin B₂)</i> | 1 mg. |
| <i>pyridoxin (vitamin B₆)</i> | 2 mg. |
| <i>vitamin B₁₂ activity</i> | 2 micrograms |
| <i>nicotinamide</i> | 25 mg. |
| <i>dicalcium phosphate</i> | 250 mg. |



Dosage: One Ritonic Capsule in mid-morning and one in mid-afternoon.

Supplied: Ritonic CAPSULES; bottles of 100.

References: 1. Natenshon, A. L.: J. Am. Geriatrics Soc. 6: 534 (July) 1958.
2. Bachrach, S.: To be published.

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C I B A SUMMIT, N. J.

2/300006

(Continued from Page 1902)

Professor Ferdinand E. Greifenstein, M.D., of Wayne State University College of Medicine, has accepted an invitation by the China Medical Board to become visiting professor at two Japanese medical colleges from October through December. Dr. Greifenstein, who is chairman of the department of anesthesiology at Wayne, will teach at the medical schools of Keio University and Kyushu University. On October 14, he spoke to the Japan Society of Anesthesiologists.

* * *

AMWA Fellowship Awards.—The annual awarding of fellowships in the American Medical Writers' Association was made at St. Louis on October 2, "in recognition of high qualifications, personal and professional, and of established standing as a medical writer, journalist or publisher." The Michigan recipient was Wallace H. Steffensen, M.D., of Grand Rapids.

* * *

The Detroit Dermatological Society, at its annual meeting elected the following to office for the year 1959-60:

President, Alice E. Palmer, M.D.
President-Elect, Clarence Livingood, M.D.
Secretary-Treasurer, John N. Grekin, M.D.
Recorder, Robert E. Burns, M.D.

* * *

The American College of Obstetricians and Gynecologists, District VIII (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, Alberta, British Columbia,

and Hawaii) held its sixth annual meeting at the Royal Hawaiian Hotel, Honolulu, Hawaii, November 15 to 22, 1959.

The scientific program was held over four days and consisted of fifteen formal papers, twenty round tables and forty-five breakfast conferences. Two days were devoted to visits to hospitals and clinics in Honolulu.

* * *

The following lectures have been presented recently by M. K. Newman, M.D., Detroit:

1. The Problem of Whiplash Injury in Its Diagnosis and Pathogenesis and Treatment. Presented at the American Academy of Law-Science on July 12, 1959, at the Sheraton-Cadillac Hotel.

2. Rehabilitation in Pulmonary Tuberculosis. Presented at the Veterans Administration Hospital, Brecksville, Ohio, on August 24, 1959.

3. Orientation and Establishment of a Department of Physical Medicine and Rehabilitation. Presented at the Receiving Hospital at General Staff Meeting in Detroit, August 28, 1959.

4. Diagnostic Problems in Muscular Atrophy of Infants and Children. Presented by M. K. Newman, M.D., John MacHenry, M.D., and L. Olivares, at the meeting of the American Association of Electromyography and Electrodiagnosis on August 30, 1959, at the Mayo Clinic, Rochester, Minnesota.

5. Sterilization of Electromyographic Needles, Beta-prone Cold Method. Presented at the meeting of the American Association of Electromyography and Electro-

(Continued on Page 1908)

Annual Clinical Conference CHICAGO MEDICAL SOCIETY

**March 1, 2, 3 and 4, 1960
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Daily Half-Hour Lectures by Outstanding Teachers and Speakers on subjects of interest to both general practitioner and specialist.

Panels on Timely Topics

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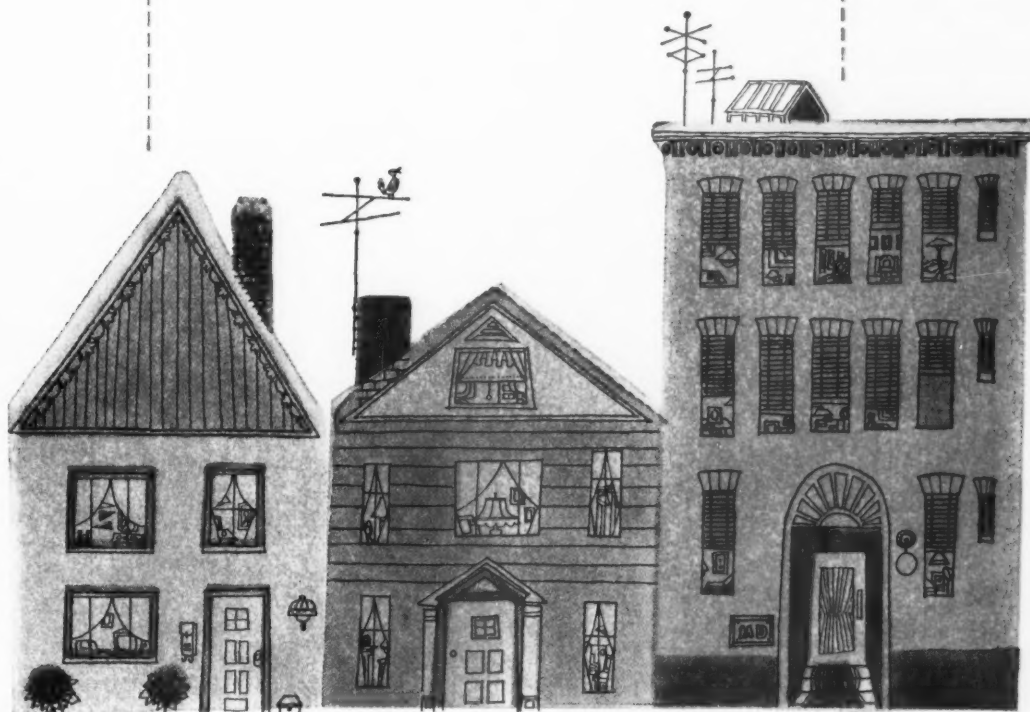
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Doctor, I
just can’t
swallow a
lot of
tablets”*

*“Little mother, just
ONE
BONADOXIN®
tablet stops morning sickness
(you take it at bedtime)”*



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More than 60,000,000 tablets prescribed and taken. Toxicity low, tolerance excellent. In bottles of 25 and 100. Usual dose: one tablet at bedtime; severe cases may require another on arising. See PDR, p. 779.

BONADOXIN also effectively relieves nausea and vomiting associated with: anesthesia, radiation sickness, Meniere's syndrome, labyrinthitis, cerebral arteriosclerosis and motion sickness.

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Each cc. contains:
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*Bibliography available on request.



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(Continued from Page 1906)

diagnosis on August 30, 1959, at the Mayo Clinic, Rochester, Minnesota.

6. Rhythmic Centripetal Compression in the Management of Chronic Lymphedema of the Upper Extremity. Presented at the meeting of the American Congress of Physical Medicine and Rehabilitation, September 2, 1959, at the Leamington Hotel, Minneapolis, Minnesota.

* * *

The Michigan Association of Blood Banks held its fifth annual meeting at the David Whitney House, Headquarters of the Wayne County Medical Society, 1010 Antietam St., Detroit, on October 10, 1959. A number of presentations were made by Michigan People and also those from California, Massachusetts, Pennsylvania and Minnesota. A Round Table Discussion was held in the afternoon, and the meeting adjourned following a Business Meeting in the late afternoon.

* * *

Resumes Practice.—As of October 12, 1959, R. E. Nobel, M.D., 607 S. Capitol, Lansing, has resumed his practice of Psychiatry and Neurology following several months' absence due to vacation and illness.

* * *

The Second Bahamas Surgical Conference will be held December 28 to January 16 at the British Colonial Hotel,

Nassau, Bahamas; and the Ninth Bahamas Medical Conference is slated for April 1 to 14, 1960, at the same Hotel.

* * *

AMA Headquarters Building in Chicago is fast taking on a new look. Extensive remodeling, redecorating and refurbishing will provide modern facilities for carrying on the activities of the AMA. All Michigan doctors are cordially invited to inspect the building whenever they are in Chicago.

* * *

In its research in connection with the Forand bill, the Indiana State Medical Association staff members visited all the nursing homes in the Hoosier state. The study revealed that private funds are financing the majority of people over 65 in Indiana's nursing homes.

* * *

The testimony made by Frederick C. Swartz, M.D., Lansing, chairman of the American Medical Association's Committee on Aging, before the United States Senate Labor and Public Welfare Committee, is printed in full in the September 26 issue of the *JAMA*, pages 431-434.

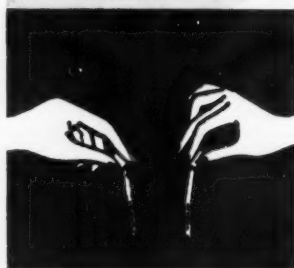
* * *

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(Continued on Page 1910)

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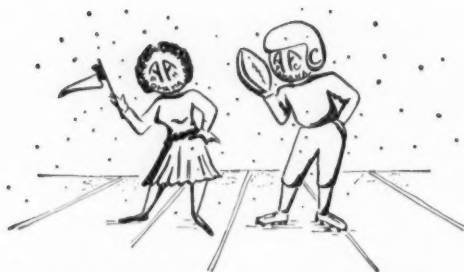
Indications: Colic (paroxysmal fussing, infantile dyspepsia, irritable crying), infantile vomiting, infantile diarrhea, pyloric spasm. **Precautions:** Fluid balance should be restored in dehydrated infants or those with oliguria before beginning treatment with SKOPYL. **Available:** 5 cc. dropper bottle.

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(Continued from Page 1908)

Award" by Wayne State University this fall. Wayne State President Clarence Hilberry, in making the award, announced that a new Shapero Hall of Pharmacy is on the planning board to recognize service given by Mr. Shapero in the area of health.

* * *

New York Medical College will sponsor a fifteen-day postgraduate cruise to the Caribbean, February 25 to March 10, 1960. The thirty-hour course is designed to cover both office and bedside problems of the general practitioner.

* * *

The International College of Angiology will hold its first regional meeting in Mexico City, December 29 to 30. The scientific sessions will cover arterial occlusive disease and thrombo-embolic phenomena.

* * *

Senior medical students at the University of Michigan heard Lester P. Dodd, MSMS legal counsel, speak October 14 on "Ten Easy Lessons on How to Land in Court."

* * *

In the past five years the insurance business has developed some thirty new approaches that provide more permanent health insurance protection for virtually all segments of the American public.

James R. Williams, vice-president of the Health Insurance Institute, made that statement at the fall meeting of the Accident and Health Club of New York.

Recent significant advances appear in the field of group insurance, said the speaker, with the introduction of long-term disability programs, the extension of coverage to employee groups of ten persons or less, and the expansion of health insurance plans to include retired persons.

* * *

The dean of a Canadian medical school believes that one of the major hazards threatening the quality of medical care on the North American continent today is a "preoccupation with the financial aspects of medicine."

Speaking at the Second World Congress on Medical Education, Dr. J. Wendell Macleod, dean of medicine, University of Saskatchewan, Saskatoon, Canada, observed that "even in respectable medical circles there is a preoccupation with the financial aspects of medicine." He said that one of the contributing factors to this trend is "our postwar economic prosperity with emphasis on dollar success."

* * *

Seven Michigan residents participated on the program at the AMA Midwest Regional Conference on Aging at Cleveland, Ohio, October 28 to 29. The sessions were held at Hotel Cleveland.

John S. DeTar, M.D., Milan, former speaker of the MSMS House of Delegates and past president of the American Academy of General Practice, gave the keynote address on the opening day. His speech was entitled "Medicine's Blueprint for the New Era of Aging."

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(Continued from Page 1910)

Two panels were held the first day. A. H. Hirschfield, M.D., Detroit, member of the MSMS Committee on Aging, was a member of the panel on "Status of the Senior: The Pattern Today"; while John B. Martin, Grand Rapids, chairman of the Michigan Legislative Advisory Council on Aging, was a member of the panel on "Areas for Action: Meeting Group Responsibilities."

Two Michigan doctors spoke at the afternoon session. Milton A. Darling, M.D., Detroit, MSMS president, presided over "Preparation for Living," and Frederick C. Swartz, M.D., Lansing, chairman of the AMA Committee on Aging, spoke about "Our Personal Challenge: A Realistic Approach to Aging."

Suggestions were presented the second day for improving aging programs by Miss Emilie G. Sargent, R.N., Detroit, executive director, Visiting Nurses Association.

The review of what the various midwest medical societies are doing was given the second day. The Michigan report was made by A. Hazen Price, M.D., Detroit, chairman of the MSMS Committee on Aging.

* * *

The first Congress of the Professions (the annual meeting of the Michigan Association of the Professions) will be held at the Sheraton-Cadillac Hotel, Detroit, January 22 and 23. Name speakers, leaders in professional fields and lay persons with special knowledge in fields related to the professions will highlight the programs. Plans include election of officers, unique seminars, entertainment, sociality and good fellowship. All MAP members are eligible to attend and are urged to do so.

* * *

MEDICAL TELEVISION SHOWS

Produced by Michigan Health Council

September 6, 1959—Subject: "Mental Health"—(Film—"We—The Mentally Ill")
September 13, 1959—Subject: "Safety"—(Films—"Dick Wakes Up" & "Your Safety First")
September 20, 1959—Subject: "Hearing"—(Film—"The Wall of Glass")
September 27, 1959—Subject: "MSMS Annual Session"
Guests: A. E. Schiller, M.D., and James J. Lightbody, M.D., both of Detroit.

* * *

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Limericks by Sydney B. Carpender—Drawings by Robert Toombs.
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Acknowledgments of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

ELEMENTARY STATISTICS WITH APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES. By Frederick E. Croxton, Ph.D., Professor of Statistics, Columbia University. 400 pages. New York: Dover Publications, Inc., 1959. Price, \$1.95.

The term, "statistics", as used in this book is very exact and specific. It refers to the methods which have been developed for working with numerical data. That actually tells the story. Frequently, the word statistics is improperly used to refer to data. Studying the book, one is impressed with the exact use of term, methods of study, the exact making of records, development of data. Various symbols are used for expressing things or working problems. A fair knowledge of mathematics is also necessary.

This book is divided into twelve chapters discussing rates, ratios, percentages, tabular and graphic presentation of data, frequency distribution, measures of central tendency, and then we get into very technical words and symbols. There are fourteen appendices covering fifty pages, ranging from the ordinates of the normal curve; areas under the normal curve; to squares, square roots, and reciprocals and logarithms and numbers.

This book is printed and designed for years of use, paper chemically treated, binding sewn in signatures, paper board binding, and prepared to receive a cloth binding. It would be extremely useful to a person interested in research and research reporting.

SYNOPSIS OF TREATMENT OF ANORECTAL DISEASES. By Stuart T. Ross, M.D., F.A.C.S., F.I.C.S., Diplomate of the American Board of Proctology; Secretary of the American Board of Proctology; Fellow and Past President of the American Proctologic Society; Fellow of the New York Proctologic Society; Fellow of the Pennsylvania Proctologic Society; Honorary Fellow of the New Jersey Proctologic Society; Corresponding Member of Sociedad Brasileira de Proctologia. Illustrated. St. Louis: The C. V. Mosby Company, 1959. Price, \$6.50.

The above book is a small, compact, concise ready reference book which I feel should be of particular value for the medical student, intern, resident, and general practitioner. The principles of practices in proctology are nicely outlined, and well illustrated to guide the doctor in his diagnosis and care of the patient.

D.J.P.

THE LAW OF MEDICAL PRACTICE. By Burke Shartel, Professor of Law, University of Michigan, and Marcus L. Plant, Professor of Law, University of Michigan. Charles C Thomas, Publisher. Springfield, Illinois. U.S.A. Price \$12.50.

This book presents, in understandable but scholarly terms, the basic outlines of the law as applied to the

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practice of medicine. The doctor's legal relationships with patients, hospitals and other doctors and his obligations to the state, are outlined and discussed. The book also contains a primer on the legal system and a guide to the prudent doctor as witness and litigant. Well indexed and footnoted.

D.O.H.

ANESTHESIA FOR INFANTS AND CHILDREN. Robert M. Smith, M.D. Anesthesiologist, The Children's Medical Center, Boston, Massachusetts; Assistant Clinical Professor of Anesthesia, Harvard Medical School; Consultant in Anesthesia, United States Naval Hospital, Chelsea, Massachusetts; and Lemuel Shattuck Hospital, Jamaica Plain, Massachusetts. Foreword by Robert E. Gross, M.D. With 182 illustrations. The C. V. Mosby Co. 1959, St. Louis. Price \$12.00.

This book presents the most complete treatise on the subject that this reviewer has found to date. If ever a book was written to cover a subject well in all its entirety, this book certainly does the job in excellent fashion. As a matter of fact, this would well be a good text for those students who might be interested in Pediatric Anesthesia. The subject matter is begun by a short discussion on the basic requirements in pediatric anesthesia followed by a good discussion of the factors determining the child's response to anesthesia and of Respiratory physiology as discussed by Dr. Charles D. Cook. The book then develops a complete story of anesthesia from the preoperative medication, choice of anesthesia, techniques, equipment used, maintenance of anesthesia, anesthesia in the various specialties, etc., to fluid therapy, complications, hypothermia, special problems and even the legal aspects. This is indeed an asset for those doing pediatric surgery, the pediatrician and the anesthesiologist.

J.L.

A WAY OF LIFE AND SELECTED WRITINGS OF SIR WILLIAM OSLER. July 12, 1849, to December 29, 1919 (formerly titled *Selected Writings of Sir William Osler*). With an introduction by G. L. Keynes, M.D., F.R.C.S. Dover Publications, Inc., New York, New York. Price \$1.50.

This is a paper bound edition of the writings of Sir William Osler, stressing in this volume the interdependence of science and the humanities, and among other papers some fascinating sketches of some of the great physicians.

The price makes it within the budget of the average student.

R.W.B.

HYPERTENSIVE DISEASE, DIAGNOSIS AND TREATMENT. By Sibley W. Hoobler, M.D. Associate Professor of Internal Medicine, University of Michigan Medical School; Director of Hypertension Unit, University of Michigan Hospital. A Hoeber-Harper Book. Price \$7.50.

This book deals primarily with the treatment of hypertension and the recognition of the various types to which specific regimens of therapy apply. The programs of patient management have grown largely from the author's ten years experience as Director of the Hyperten-

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An outstanding feature of this practical text is the inclusion of twelve appendixes with carefully detailed instructions for clinical and laboratory tests and treatment regimens, including a section on the management of hypertensive emergencies. This is a ready source of such practical information for quick reference.

The text is well indexed and cross referenced. Short illustrative case histories add considerable interest and are incorporated throughout.

I recommend the book heartily to the practicing physician who deals with such problems. The author succeeds admirably in bringing out the essentials of a complicated subject. The book is readable and interesting.
R.W.B.

501 QUESTIONS AND ANSWERS IN ANATOMY.

By Stanley D. Mirovianis, B.S., M.A., Ph.D., F.A.-A.A.S., F.I.A.S., Professor of Anatomy and Chairman of the Department, Still College. Formerly: Lecturer in Comparative History, Boston University; Professor of Vertebrate Anatomy and Chairman of the Department of Biology, Northeastern University; Professorial Lecturer in Mammalian Anatomy, Graduate School, Massachusetts College of Pharmacy; Professor of Gross Anatomy and Chairman of the Department, The New

England Institute of Anatomy; Major, The Medical Service corps, Staff and faculty, 373rd General Hospital Unit; Lt. Colonel, Staff and Faculty 5904th Medical Department, 5904 School, USAR. Presently: Lt. Colonel, The Medical Service Corps, USAR; Professor of Human Gross Anatomy and Chairman of the Department, Still College, Des Moines, Iowa. With an introduction by: Ernest V. Enzmann, Ph.D., Associate Professor of Histology and Embryology, Still College. Vantage Press, New York, Washington, Hollywood. Price \$5.00.

This book is published as an aid to students in their studies of Anatomy for board licensure, and Basic Science Examinations. The questions are not arranged in any systematic order and they are followed by the answer in brief outline form sufficient for the intended purpose. Standard medical texts are used for the source material.
R.W.B.

DIABETIC MANUAL. By Elliott P. Joslin, M.D., Sc.D. Clinical Professor of Medicine, Emeritus, Harvard Medical School; Formerly Medical Director, George F. Baker Clinic at New England Deaconess Hospital; Consulting Physician, Boston City Hospital; Honorary President, International Diabetes Federation; Honorary President, American Diabetes Association. President, Diabetes Foundation, Inc., 10th Ed. Illustrated. For the Patient. Lea & Febiger, Philadelphia, 1959. Price \$3.75.

Dedicated to aggressive and continuous treatment with strict control of diabetes, Dr. Joslin has brought out the

(Continued on Page 1920)

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(Continued from Page 1918)

tenth edition of his manual for the diabetic patient. Supporting his belief that education of the patient is the most important factor in successful diabetic control, this revision brings the famous manual up to date with a discussion of current advances in the various phases of the subject. Oral hypoglycemic agents are discussed and Dr. Joslin's comments on them are presented.

This 304-page well-bound and well-illustrated manual is a "must" for the well informed diabetic patient at a nominal price.

R.W.B.

A COOKBOOK FOR DIABETICS. Recipes from the ADA Forecast. By Deaconess Maude Behrman, published by the American Diabetes Association, edited by Leonard Louis Levinson. Copyright 1959 by The American Diabetes Association, Inc., 1 East 45th Street, New York 17, N. Y. Price \$1.00.

This cook book is quite elaborate. It is spirally bound so that the pages lay flat. It contains unit values of various foods with the substitutes which can be used for them, also expressed in units so that many variations can be made. There are some tables and lists of things that can be exchanged one for the other showing the values and the weights and the amounts to be used for each unit. The doctor is to prescribe the number of units of various foods which will make up the patient's diet. There is a section on sugar substitutes, on calories and vitamins and minerals, flavoring. Several pages of detailed breakfasts in which the foods to be used are listed above the amount and the weight and then detailed methods of preparation. The same sort of a section is there for luncheons and supper, one dish meals, meals on salads, preparation of cheeses, chicken and everything else—about 160 pages with a very complete index. A very handy book for the person who is cooking for a diabetic or for the diabetic who is cooking for himself. This book is produced by the American Diabetes Association. There is a reduction in price if purchased in numbers. This is a very handy little book, pocket size, well printed, extremely well illustrated and clear discussions of the conditions mentioned. It is quite complete and up to date.

SYNOPSIS OF EAR, NOSE AND THROAT DISEASES. Robert E. Ryan, B.S., M.D., M.S. (ALR), F.A.C.S. Department of Otolaryngology, St. Louis University School of Medicine; Associate Otolaryngologist, St. John's Hospital, St. Louis; Assistant Otolaryngologist, Cardinal Glennon Hospital for Children and St. Louis University Group of Hospitals, St. Louis; Diplomate, American Board of Otolaryngology; Former Fellow of Mayo Clinic, Rochester, Minnesota. William C. Thornell, A.B., B.M., M.D., M.S. (ALR), F.A.C.S. Assistant Professor, Department of Otolaryngology, Cincinnati College of Medicine, University of Cincinnati; Staff Member, Cincinnati General Hospital, Good Samaritan Hospital, Deaconess Hospital, St. Francis Hospital, and St. Mary's Hospital, Cincinnati; Diplomate, American Board of Otolaryngology; Former Fellow and Member of the Staff of Mayo Clinic, Rochester, Minnesota. Hans von Leden, M.D., F.A.C.S., F.I.C.S., Assistant Professor of Otolaryngology, Northwestern University Medical School, Chicago;

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Most of the common ailments covered by the specialty of ear, nose and throat are quite clearly described and outlined.

ANATOMY OF THE HUMAN BODY. By Henry Gray, F.R.S., Late Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. 27th ed. Edited by Charles Mayo Goss, M.D., Managing Editor of the Anatomical Record; Professor of Anatomy, Louisiana State University School of Medicine, New Orleans, Louisiana. 1174 Illustrations mostly in color. Lea & Febiger, Philadelphia, 1959. Price \$17.50.

Gray's Anatomy for 1959, is in its centennial publication year in America, the original being published in England in 1858. This edition is probably the most outstanding and ambitious ever made. It is heavy (1450 pages) with easily readable print and wonderful illustrations. The student is offered every convenience of paper, type, etc. This work is standard and has been studied by our grandfathers and great-grandfathers.

Before this present edition there were 572,500 copies printed which would make a pile twenty-four miles high. We have been happy to read many sections and find everything complete and up to the minute. This is a wonderful item for the student and the practitioner as well—as it always has been.

THE MODERN FAMILY HEALTH GUIDE. Edited by Morris Fishbein, Formerly Editor, Journal of the American Medical Association; Editor, Excerpta Medica; Medical Editor, Britannica Book of the Year. Contributing Specialists: Harry Bakwin, Ruth Morris Bakwin, Frank A. Calderone, A. C. Corcoran, John M. Cotton, Edwin J. DeCosta, Sol T. Delee, Benjamin M. Gasul, John R. Heller, Horace L. Hodes, Lewis M. Josephson, Charles H. Lawrence, Vurrier McEwen, George J. Mohr, Milton M. Mosko, John B. O'Sullivan, Irvin H. Page, Carl J. Potthoff, Charles Rein, Mortimer Spiegelman, Gene H. Stollerman, Carl D. Strouse, Stanley E. Telser, Hart E. Van Riper, Samuel Weiss. Doubleday & Company, Inc., Garden City, New York. Price \$7.50.

In his new Health Guide, Doctor Fishbein has actually produced two books in one binding. The first section is divided into ten parts, each of which is contributed by a listed corps of contributors: Family Health, Infancy and Childhood, Your Heart, Major Disease Conditions, The Digestive System, Other Important Disorders, Mind and Nervous System, Later Years, Medical Statistics, and First Aid. The second book of 160 pages is a medical encyclopedia with alphabetical listing and very inclusive. This part is thumb indexed.

THE DOCTOR'S LIBRARY

AIDS TO ARITHMETIC IN NURSING. William C. Fream, S.R.N., B.T.A. Cert. (Hons.), S.T.D. (London), Male Tutor, N. Nigeria. Formerly Male Tutor, Federal Government of Nigeria and Tutor in Sole Charge, Highwood Hospital for Children, Brentwood, Essex. Second Edition. London. Bailliere, Tindall and Cox, 7 and 8 Henrietta Street, W.C. 2, 1959. Price \$2.25.

This is a small, pocket size book, printed in clear type on good paper. It is a textbook on arithmetic as applied to nurses. The chapters are devoted to fractions, what they are and their simplification. This book is printed in England and has not been readjusted to American usage. On page 4, introducing fractions, it says "we all know there are twenty ounces in a pint." Not in America. They were of course referring to imperial measure. Diagrams, mathematical formula, methods, etc., are given full attention. The book is handy and useful.

BOOKS RECEIVED

DISEASES OF THE NERVOUS SYSTEM. Described for Practitioners and Students by Sir Francis Walshe, M.D., D.Sc., F.R.S. Fellow of the Royal College of Physicians of London; Fellow of University College, London; Consulting Physician to University College Hospital and to the National Hospital for Nervous Diseases, Queen Square. With Chapters on The Neurological Complications of Liver Disease and Hepatolenticular Degeneration by J. M. Walshe, M.R.C.P. Assistant Director of Research, Department

of Experimental Medicine, Cambridge University. Ninth Edition. Baltimore: The Williams and Wilkins Company, 1958. \$8.00.

POLIOMYELITIS. Papers and Discussion presented at the Fourth International Poliomyelitis Conference, compiled and edited for the International Poliomyelitis Congress. Philadelphia and Montreal: J. B. Lippincott Company, 1959. Price, \$7.50.

EPILEPSY. By Manfred Sakel, M.D. With a Preface by Otto Poetzl, Professor Emeritus, University and Clinic of Vienna. New York: Philosophical Library, 1959. Price, \$5.00.

CIBA FOUNDATION SYMPOSIUM ON THE NEUROLOGICAL BASIS OF BEHAVIOR. In commemoration of Sir Charles Sherrington, O.M., G.B.E., F.R.S., 1957-1958. Editors for the Ciba Foundation G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Cecilia M. O'Connor, B.Sc. 109 illustrations. Boston: Little, Brown and Company, 1959. Price, \$9.00.

RADIOACTIVE FALLOUT—A TWO-YEAR SUMMARY REPORT. By Charles L. Dunham, M.D., Director, Division of Biology and Medicine. Prepared for presentation at the Hearings on Fallout before the Joint Committee on Atomic Energy, May 5-8, 1959. Technical Information Service. Washington 25, D. C.: Office of Technical Services, Department of Commerce, 1959. Price, \$1.25.



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THE PROBLEM OF EXCESS TUBERCULOSIS BEDS IN MICHIGAN

(Continued from Page 1834)

four state tuberculosis sanatoria have had surplus capacity for some time and have just this year received permission to accept non-tuberculous individuals in their institutions. Under the pressure of those interested in mental health, provision has been made for the care of mental patients mostly of the imbecile type who need nursing care and forced feedings. Experience with such patients in these institutions has not been sufficient to warrant any conclusions. It would appear, however, that the per diem cost will be much higher than in the usual mental institutions or nursing homes.

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for this care is yet to be determined, although the experience of county institutions suggests that chronically ill patients may be most suitable. In the meantime, it should be mentioned that the role of the sanatorium in the care of tuberculosis is by no means eliminated. The vast majority of newly diagnosed cases occur among people who come from the lowest economic group and cannot afford other care. Furthermore, except for the most favorable cases of tuberculosis, the hospital facilities are needed to control the patient's clinical course with adequate laboratory observation, and for such health education as may seem appropriate. Surgery, which is a necessity in at least ten per cent of the patients and probably more, must be done in the properly equipped hospital or sanatorium. Finally, some patients fail to recover from tuberculosis and require prolonged hospitalization and isolation if this disease is to be controlled. This the sanatorium provides.

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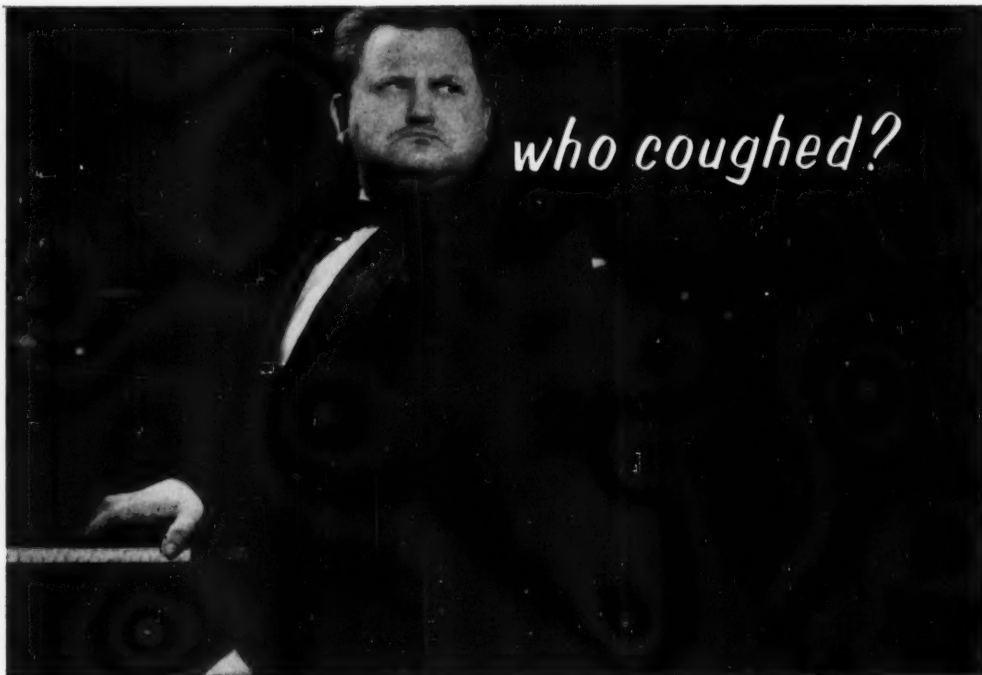
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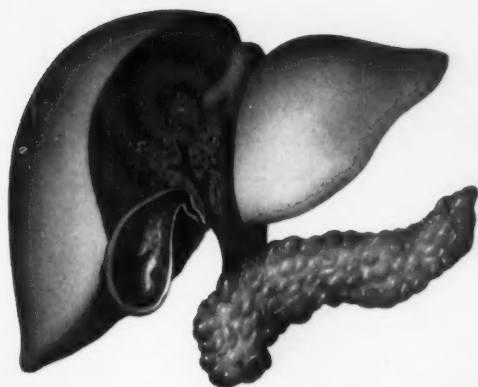
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